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HEAT TRANSFER TESTS OF A 0.0175-SCALE
SPACE SHUTTLE ORBITER MODEL (29-0) TO
DETERMINE THE EFFECT OF SURFACE TEMPERATURE ON
BOUNDARY LAYER TRANSITION AT MACH 8.0 IN THE
AEDC VKI TUNNEL B (TEST OH4A)

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANAGEMENT services

SPACE DIVISION



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AEDC VKF TUNNEL B (TEST OH4A)

By

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Prepared under NASA Contract Number NAS9-13247

By

Data Management Services
Chrysler Corporation Space Division
New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: AEDC VKF Tunnel B Test VA352
NASA Series Number: OH4A
Model Number: 29-0
Test Dates: Part 1, 12 November 1973; Part 2, 5 December 1973
Occupancy Hours: 20

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ABSTRACT

Test OH4A was conducted in the Arnold Engineering Development Center (AEDC) von Karman Gas Dynamics Facility (VKF) Tunnel B. It consisted of heat transfer measurements on a 0.0175-scale model of the Space Shuttle Orbiter with the purpose of determining the effect of wall temperature on the point of boundary layer transition. The test was conducted at Mach 8 over a range of Reynolds numbers from 1.0 to 3.7×10^6 per foot.

Two regions of initial model wall temperature were investigated. Eighteen good runs were obtained at each region in support of the test objectives. Tabulated data are presented in this report along with a description of the test procedure. Preliminary data indicated that the initial model wall temperature did not obviously affect the point of boundary layer transition.

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INTRODUCTION

The surface of the Space Shuttle Orbiter is subjected to changing conditions, particularly temperature, during the cycle of launch, orbit, and return to earth. It is advantageous to know the effect changing temperature has on surface conditions. In particular, the point of boundary layer transition is of interest since a change from a laminar to turbulent boundary layer represents higher convective heating rates.

This investigation (test OH4A) was undertaken to determine the effect of model wall temperature on the point of boundary layer transition at Mach 8.0. Data were taken (at various Reynolds numbers) with model initial temperature at room temperature and approximately -300°F. The results of the investigation and test procedures are presented in this report.

NOMENCLATURE

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
B		body
C		canopy or thermocouple gauge material specific heat (BTU/lbm-°R)
C _p		specific heat of tunnel airstream (BTU/lbm-°R)
	CONFIG	model configuration number
F		body flap
	GAGE	model thermocouple gage number
	GROUP	run number
h		heat transfer coefficient (BTU/ft ² -sec-°R)
H		Enthalpy (BTU/lb)
h _o	HREF-FR	theoretical stagnation point heat transfer coefficient (BTU/ft ² -sec-°R)
h	H(TO)	heat transfer coefficient at r = 1 (BTU/ft ² -sec-°R)
h/h _o	H(TO)/HREF	ratio of heat transfer coefficient to theoretical stagnation point heat transfer coefficient
h	H(.9TO)	heat transfer coefficient at r = .9 (BTU/ft ² -sec-°R)
h/h _o	H(.9TO)/HREF	ratio of heat transfer coefficient to theoretical stagnation point heat transfer coefficient
h	H(TAW)	heat transfer coefficient with r as a function of the local flow deflection angle (BTU/ft ² -sec-°R)
h/h _o	H(TAW)/HREF	ratio of heat transfer coefficient to theoretical stagnation point heat transfer coefficient
K		thermocouple gauge material thermal conductivity (BTU/ft-sec-°R)
M		OMS pod

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>PTot Symbol</u>	<u>Definition</u>
M	MACH NO	freestream Mach number
μ_{∞}	MU-INF	freestream viscosity (lb-sec/ft ²)
P		pressure (psia)
P_{∞}	P-INF	freestream static pressure (psia)
P_0	P0	freestream stagnation pressure (psia)
q_{∞}	Q-INF	freestream dynamic pressure (psia)
$\dot{q}(t)$	QDOT	heat transfer rate (BTU/ft ² -sec)
r		recovery factor
r_s		radius of a scaled one-foot sphere (ft)
R		gas constant (ft-lb/slug-°R)
Re	RE/FT	freestream unit Reynolds number (1/ft)
ρ_{∞}	RHO-INF	freestream density (slugs/ft ³)
ST	STFR	Stanton number
t		time (sec)
T		temperature or temperature difference (°R)
T_{∞}	T-INF	freestream static temperature (°R)
T_0	T0	freestream stagnation temperature (°R)
T_w	TW	model surface temperature (°R)
V_{∞}	V-INF	freestream velocity (ft/sec)
u		velocity in the x direction at the edge of the boundary layer
V		vertical tail

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
W		wing
x		distance along the curved surface of a sphere (ft)
X/L	X/L	axial location of thermocouple gauge
2Y/b	2Y/B	span wise location of thermocouple gauge
Δ		increment
μ		viscosity of air (lb-sec/ft ²)
π		constant
ρ		density (slugs/ft ³)
τ		dummy time variable of integration

Angles

α	ALPHA-MODEL	model angle of attack
α_s	ALPHA-SECTOR	strut pitch angle
	ALPHA-PREBEND	sting offset angle
δ		local flow deflection angle
θ		local model surface angle
ϕ	PHI	thermocouple gauge roll angle location measured clockwise from the bottom centerline looking forward
	ROLL-MODEL	model roll angle
	YAW	model yaw angle

Subscripts and Superscripts

AW	adiabatic wall conditions
i	summation index

NOMENCLATURE (Concluded)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
i_n		initial conditions
o		stagnation conditions
w		wall conditions
∞		freestream conditions
$'$		conditions behind a normal shock

REMARKS

Test OH4A was conducted in two parts. Part 1 consisted of a series of runs with the initial model wall temperature near room temperature plus an attempt to complete the same series of runs with an initial model wall temperature of -300°F . Part 1 was terminated during the cold wall runs, primarily because of a discontinuity at the model nose/body joint due to thermal stresses and/or uneven thermal expansions. This discontinuity caused inconsistent perturbations in the heating rate data and also affected the boundary layer transition point. Other problems associated with the cold wall runs were frost formation on the model and microswitch freezing in the test section tank while the model was cooled. Part 2 consisted of the series of cold wall runs completed after changes were made to alleviate the problems mentioned above. The test conditions and test run schedule are presented in Tables I and II, respectively.

All problems encountered during the cold wall portion of Part 1 were successfully resolved for Part 2. The nose/body joint was welded onto the sides and lower surface to eliminate the discontinuity. The formation of frost was prevented by the following three changes:

- (1) The model was injected into the airstream in an upright position instead of inverted.
- (2) The liquid nitrogen manifold, used for cooling, was placed directly under the model at the same angle, allowing the model to be bathed in nitrogen until injection into the airstream.

REMARKS (Concluded)

- (3) During Reynolds number changes, the model was sprayed with gaseous nitrogen at zero degrees Fahrenheit. This technique cleaned the model of condensation, thus eliminating the need to open the test section tank, and also periodically warmed the tank to prevent microswitch freezing.

CONFIGURATIONS INVESTIGATED

Model 29-0 is a 0.0175-scale replica of the Space Shuttle Orbiter designed to the -139 lines. Dimensional data for the model are shown in Table III and nominal dimensions are shown in Figure 1. The model was constructed of 15-5 PH stainless steel and sting mounted through its base. It is a thick skin heat transfer model designed to accommodate pressure taps, 1/4-inch diameter calorimeter gauges, and 1/8-inch diameter coaxial gauges. The rudder and elevon were not simulated for this model.

Nomenclature for model 29-0 is as follows:

B_{17}	Fuselage body (Configuration 3)
C_7	Canopy (Configuration 3)
F_5	Body flap (Configuration 3)
M_4	OMS pods (Configuration 3)
V_7	Vertical tail (Configuration 3)
W_{103}	Wing (Configuration 3)

INSTRUMENTATION

For test OH4A, the model instrumentation consisted of seventy-five AEDC 1/8-inch coaxial thermocouple gauges. The coaxial gauge is a surface chromel-constantan thermocouple which relates surface temperature to the incident heat flux by homogeneous, one-dimensional, semi-infinite slab theory. The coaxial thermocouple is shown in Figure 2.

The coaxial gauge locations are shown in Figure 3 and are tabulated in Table IV. All gauges are on the fuselage lower centerline, fuselage lower surface (left-hand side), or left wing lower surface.

A separate calibration was required for the thermocouple gauges at cold wall temperatures (-300°F).

FACILITY DESCRIPTION

The Arnold Engineering Development Center (AEDC) von Karman Gas Dynamics Facility (VKF) Tunnel B is a continuous-hypersonic-closed circuit wind tunnel with air as the test medium. It has a 50-inch diameter test section and is capable of nominal Mach numbers of 6 and 8. Models are injected into the test section from a tank directly below. Operating characteristics of Tunnel B can be found in Reference 1.

TEST PROCEDURES

The series of runs with the initial model wall temperature near room temperature were completed first and followed, after a delay, by the series of cold wall runs. For the room temperature runs, the model was injected inverted into the airstream for about three seconds to record data. It was inverted because of the blockage of the upright installation at low Reynolds numbers. The room temperature runs were completed without incident and immediately followed by an attempt to complete the cold wall runs (see Remarks section). The liquid nitrogen manifold, used for cooling the model, was located on the sidewall of the tunnel test section tank, which required that the model be rolled with the bottom surface facing the manifold for cooling and then returned to the inverted position for injection. This procedure contributed heavily to the formation of frost on the model due to the time delay.

After the problems responsible for the test delay were resolved, the cold wall runs were completed. A new approach was used which allowed the model to be positioned upright (at 30° alpha) in the test section tank directly over the liquid nitrogen manifold. After cooling, the model was injected into the airstream, and no blockage problems were encountered. A cycling technique was devised during the test to decrease the cooling time of the model. First, the test section tank was evacuated until the liquid nitrogen started to solidify. Then the tank pressure was increased slowly to near atmospheric. This cycle was repeated until the model wall temperature reached -300°F , at which time the tank was evacuated

TEST PROCEDURES (Concluded)

again to obtain the pressure differential needed to open the test section safety doors and inject the model (tunnel pressure \approx 0.1 psia and tank pressure \approx 0.15 psia during injection).

Normally two cycles were required before the model started cooling, possibly due to gas purging from the liquid nitrogen system. Another technique used was to blow gaseous nitrogen from the tank door onto the model during Reynolds number changes (tunnel total pressure and total temperature changes). The gaseous nitrogen was at approximately zero degrees Fahrenheit and served two purposes: (1) it cleaned the model of any condensation and (2) it periodically warmed the test section tank, which prevented microswitch freezing and eliminated any need to open the tank door. It was found that with longer model cleaning time, less condensation developed on the model during runs.

DATA REDUCTION

Surface temperatures measured by the coaxial thermocouple gauge are related to the incident heat flux by homogeneous, one-dimensional, semi-infinite slab theory. The heat flux is expressed by the following (Reference 2):

$$\dot{q}(t) = \frac{\sqrt{\rho CK}}{\sqrt{\pi}} \left[\frac{T(t)}{\sqrt{t}} + 1/2 \int_0^t \frac{T(t) - T(\tau)}{(t-\tau)^{3/2}} d\tau \right] \quad (1)$$

Where: $T = T_w - T_{w_{in}}$

Values of T were calculated by converting gauge outputs in millivolts to temperatures using curve fits of temperature versus millivolt tables for chromel-constantan thermocouples. The thermocouple gauge outputs were recorded on magnetic tape at a rate of twenty times per second.

Reference (3) provides a concise numerical technique for obtaining heat flux from a surface thermometer output. When applied to Equation 1, the solution is:

$$\dot{q}(t) = \frac{\sqrt{\rho CK}}{\sqrt{\pi}} \left[\frac{T(t)}{\sqrt{t}} + \frac{T(t) - T(t - \Delta t)}{\Delta t^{1/2}} + \sum_{i=1}^{n-1} \left\{ \frac{T(t) - T(t_i)}{(t - t_i)^{1/2}} - \frac{[T(t) - T(t_{i+1})]}{(t - t_{i+1})^{1/2}} + (2) \frac{[T(t_i) - T(t_{i-1})]}{(t - t_i)^{1/2} + (t - t_{i-1})^{1/2}} \right\} \right] \quad (2)$$

Where: $T = T_w - T_{w_{in}}$

DATA REDUCTION (Continued)

Values of $\dot{q}(t)$ were calculated using Equation 2 and a time increment of 0.05 second averaged over a period of one second.

Heat transfer coefficient, h , was calculated by:

$$h = \frac{\dot{q}(t)}{T_{AW} - T_w} \quad (3)$$

Where: $T_{AW} = rT_o$

The recovery factor, r , was a function of the local flow deflection angle at each gauge location. With the exception of gauge number 13, where $r = 0.9$, the recovery factor is defined by:

$$r = \frac{T_{AW}}{T_o} = 0.867 + 0.133 \sin^{1.55} \delta \quad (4)$$

Where : $\delta = \alpha + \theta =$ local flow deflection angle.

$\alpha =$ model angle of attack

$\theta =$ local model surface angle

Values of θ for each gauge are given in Table V.

Heat transfer coefficient ratios, h/h_o , were calculated using:

$$h_o = \frac{\dot{q}_o(t)}{T_{AW} - T_w} \quad (5)$$

Where:

$$\dot{q}_o(t) = 0.94 (\rho_w \mu_w)^{.5} (\rho_o' \mu_o' / \rho_w \mu_w)^{.4} (H_o - H_w) (du/dx)^{.5} \quad (6)$$

With:

$$\mu = \frac{0.0232 \times 10^{-6} T^{1/2}}{(1 + 220/T)} \quad (7)$$

DATA REDUCTION (Concluded)

$$\frac{du}{dx} = \left(\frac{1}{r_s} \right) [2 RT (1 - P_\infty/P_0)]^{1/2} \quad (8)$$

The Stanton number was calculated by:

$$ST = \frac{h_o}{\rho_\infty U_\infty C_p} \quad (9)$$

The freestream conditions including Reynolds number were calculated using equations shown in Reference 4 with measured tunnel stagnation temperatures, stagnation pressures, and static pressures.

Raw data from the room temperature and cold wall series of runs were reduced using two different coaxial thermocouple gauge calibrations. This was necessary due to changes in gauge properties, $\sqrt{\rho CK}$ at the two different temperature regions.

A description of the tabulated data format can be found in the test nomenclature.

DISCUSSION OF RESULTS

The test OH4A tabulated data are presented in Appendix A. Although heat transfer coefficient data are also presented for recovery factors of 1.0 and 0.9, the primary interest here is the heat transfer coefficient data where the recovery factor varies with the local flow deflection angle, $H(T_{AW})$.

Plotted data from test OH4A are presented in Reference (5). The heat transfer coefficient ($H(T_{AW})/H_{REF}$) and temperature (T_w/T_o) ratios are plotted for various locations on the Orbiter fuselage and wing.

Since the purpose of this report is to present the test data, no conclusions can be stated regarding its content. However, it can be stated that the data obtained adequately met the test requirements. The preliminary data, reviewed at the test site, indicated no obvious effect on the point of boundary layer transition due to model wall temperature.

REFERENCES

1. "Test Facilities Handbook," Arnold Engineering Development Center, Ninth Edition, July 1971.
2. Carslaw, H. S. and Jaeger, J. C., Conduction of Heat in Solids, Second Edition, Oxford, Clarendon Press, 1959.
3. Cook, W. J. and Felderman, E. J., "Reduction of Data from Thin-Film Heat-Transfer Gages: A Concise Numerical Technique," AIAA Journal, Volume 4, No. 3, March 1966.
4. Ames Research Staff, "Equations, Tables, and Charts for Compressible Flow," National Advisory Committee for Aeronautics, Report 1135, 1953.
5. W. R. Martindale and L. L. Trimmer, "Test Results From the NASA/Rockwell International Space Shuttle Test (OH44) Conducted in the AEDC-VKF Tunnel B," AEDC-DR-74-39, May 9, 1974.

TABLE 1. TEST CONDITIONS

Mach No. M	Total Pressure Po (psia)	Total Temperature To (°F)	Reynolds No. Re/ft
8	860	880	3.7×10^6
8	675	870	3.0×10^6
8	545	850	2.5×10^6
8	425	840	2.0×10^6
8	325	835	1.5×10^6
8	210	810	1.0×10^6

TABLE II.

TABLE II.

TEST: PH4A

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: NOV. 12, 1973

DATA SET IDENTIFIER	CONFIGURATION	SCHD. PARAMETERS/VALUES				NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)			
		α	β	α_s	M	F ₀	To	Re x 10 ⁶	Room Temp.	Runs (Part 1)
001	B7C1F5M4V1W1a3	25		+5	8	860	880	3.7	1	
002		30		0					2	
003		35		-5					3	
004		25		+5		675	870	3.0	4	
005		30		0					5	
006		35		-5					6	
007		25		+5		545	850	2.5	7	
008		30		0					8	
009		35		-5					9	
010		25		+5		425	840	2.0	10	
011		30		0					11	
012		35		-5					12	
013		25		+5		325	835	1.5	13	
014		30		0					14	
015		35		-5					15	
016		25		+5		210	810	1.0	16	
017		30		0					17	
018		35		-5					18	

1	7	13	19	25	31	37	43	49	55	61	67	75	76
---	---	----	----	----	----	----	----	----	----	----	----	----	----

α OR β

α_s = Sector Angle

COEFFICIENTS

IDVAR (1)

IDVAR (2)

NDV

SCHEDULES

TABLE II. - Continued.

TABLE II. CONTINUED.

TEST: 0144A		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: DEC. 5, 1973		
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		CONTROL DEFLECTION				NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)					
		α	β	Δ	δ	M	P		T	ReX	Job		Room Temp	Runs (Part 2)
032	B1C7F5M4V1W103	30		0	8	860	880		3.7		32			
033		35		+5							33			
034		25		-5							34			
035		30		0							Cold No 11 Runs (Part 2)			
036		35		+5							35			
037		25		-5							36			
038		25		-5							37	Excessive Frost		
039		30		0		675	870				38	Repeat 37		
040		35		+5					3.0		39			
041		25		-5							40			
042		30		0		545	850				41			
043		35		+5					2.5		42	Slight Frost		
044		25		-5							43			
045		30		0							44			
046		30		0		425	840				45			
047		35		+5							46			
048		25		-5							47			
											48			
1		7	13	19	25	31	37	43	49	55	61	67	75	76
<div><div><div>α OR β</div><div>SCHEDULES</div></div><div>COEFFICIENTS</div><div><div>IDVAR (1)</div><div>IDVAR (2)</div><div>NDV</div></div></div>														

TABLE II. - Concluded.

TEST: 044A		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: DEC. 5, 1973	
DATA SET IDENTIFIER	CONFIGURATION	SCHD.			CONTROL DEFLECTION			NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)		TEST RUN NUMBERS		
		α	β	δ	M	P	T		Rex 106	Cold Wall Runs (Part 2)			
049	B7C7E M4 V7 W0.3	30		0	8	325	835		1.5	49			
050		35		+5						50			
051		25		-5						51			
052		30		0		210	810		1.0	52			
053		35		+5						53			
054		25		-5						54			
055		30		0		545	850		2.5	55	Repeat 11 & 14		
056		35		+5						56	Repeat 12		
057		25		-5						57	Repeat 13		

TABLE III. MODEL DIMENSIONAL DATA

MODEL COMPONENT : BODY - B₁₇

GENERAL DESCRIPTION : Fuselage, 3 configuration, lightweight Orbiter
per Rockwell Lines VL70-000139.

MODEL SCALE: 0.0175

DRAWING NUMBER : VL70-000139

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length In.	<u>1290.3</u>	<u>22.58025</u>
Max Width In.	<u>267.6</u>	<u>4.6830</u>
Max Depth - In.	<u>244.5</u>	<u>4.27875</u>
Fineness Ratio	<u>4.82175</u>	<u>4.82175</u>
Area Ft ²	<u></u>	<u></u>
Max. Cross-Sectional	<u>386.67</u>	<u>0.11842</u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>

TABLE III. MODEL DIMENSIONAL DATA (CONT'D)

MODEL COMPONENT : CANOPY - C7

GENERAL DESCRIPTION : Configuration 3 per Rockwell Lines VL70-000139.

MODEL SCALE: 0.0175

DRAWING NUMBER : VL70-000139

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ($X_0=433$ to $X_0=578$) - In. F.S.	<u>145</u>	<u>2.538</u>
Max Width	<u> </u>	<u> </u>
Max Depth	<u> </u>	<u> </u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. MODEL DIMENSIONAL DATA (CONT'D)

MODEL COMPONENT : BODY FLAP - F₅

GENERAL DESCRIPTION : 3 Configuration per Rockwell Lines VL70-000139

MODEL SCALE: 0.0175

DRAWING NUMBER : VL70-000139

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length - In.	<u>84.70</u>	<u>1.48225</u>
Max Width - In.	<u>267.6</u>	<u>4.6830</u>
Max Depth	<u> </u>	<u> </u>
Fineness Ratio	<u> </u>	<u> </u>
Area Ft ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u>142.5195</u>	<u>0.04365</u>
Wetted	<u> </u>	<u> </u>
Base	<u>38.0958</u>	<u>0.01167</u>

TABLE III. MODEL DIMENSIONAL DATA (CONT'D)

MODEL COMPONENT : OMS POD- M₄

GENERAL DESCRIPTION : Configuration 3 per Rockwell Lines VL70-000139
Orbital maneuvering system pods located on the orbiter aft fuselage.

MODEL SCALE: 0.0175

DRAWING NUMBER : VL70-000139

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length - In.	<u>346.0</u>	<u>6.0550</u>
Max Width In.	<u>108.0</u>	<u>1.890</u>
Max Depth In.	<u>113.0</u>	<u>1.992</u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

Centerline of OMS Pod:

WP - 463.9 INFS; WP 400 + 63.9 = 463.9

BP - 80.0 INFS

Length 1214.0 to 1560.0 = 346.0 INFS

NOTE: M₄ identical to M₃ of 2A configuration, except intersection to body.

TABLE III DIMENSIONAL DATA (CONT'D)

MODEL COMPONENT: VERTICAL - V₇GENERAL DESCRIPTION: Centerline vertical tail, doublewedge airfoil with rounded leading edge.NOTE: Same as V₅ , but with manipulator housing removed.MODEL SCALE: 0.0175DRAWING NUMBER:VI70-000139, VI70-000095DIMENSIONS:FULL-SCALEMODEL SCALETOTAL DATA

Area (Theo) Ft ²		
Planform	<u>425.92</u>	<u>0.13044</u>
Span (Theo) In	<u>315.72</u>	<u>5.52510</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>0.404</u>	<u>0.404</u>
Sweep Back Angles, degrees		
Leading Edge	<u>45.000</u>	<u>45.000</u>
Trailing Edge	<u>26.249</u>	<u>26.249</u>
0.25 Element Line	<u>41.130</u>	<u>41.130</u>
Chords:		
Root (Theo) WP	<u>268.50</u>	<u>4.69875</u>
Tip (Theo) WP	<u>108.47</u>	<u>1.89822</u>
MAC	<u>199.81</u>	<u>3.49667</u>
Fus. Sta. of .25 MAC	<u>1463.50</u>	<u>25.61125</u>
W. P. of .25 MAC	<u>635.522</u>	<u>11.12164</u>
B. L. of .25 MAC	<u>0.00</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle Deg	<u>10.000</u>	<u>10.000</u>
Trailing Wedge Angle Deg	<u>14.920</u>	<u>14.920</u>
Leading Edge Radius	<u>2.0</u>	<u>0.0350</u>
Void Area	<u>13.17</u>	<u>0.00403</u>
Blanketed Area	<u>0.00</u>	<u>0.00</u>

TABLE III DIMENSIONAL DATA - Concluded.

MODEL COMPONENT: <u>WING-W₁₀₃</u>		
GENERAL DESCRIPTION: <u>Configuration 3 orbiter per Lines VL70-000139.</u>		
NOTE: <u>Same planform as Wg7. except dihedral at Trailing Edge.</u>		
MODEL SCALE: <u>0.0175</u>		
TEST NO.	DWG. NO. <u>VL70-000139</u>	
DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2		
Planform	2690.00	0.82381
Span (Theo) In.	936.68	16.39190
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees	3.500	3.500
Incidence Angle, degrees	3.000	3.000
Aerodynamic Twist, degrees	+ 3.000	+ 3.000
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	- 10.24	- 10.24
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.O.O.	689.24	12.06170
Tip, (Theo) B.P.	137.85	2.41238
MAC	474.81	8.30918
Fus. Sta. of .25 MAC	1136.89	19.89558
W.P. of .25 MAC	299.20	5.2360
B.L. of .25 MAC	182.13	3.18728
EXPOSED DATA		
Area (Theo) Ft^2	1752.29	0.53664
Span, (Theo) In. BP108	720.68	12.61190
Aspect Ratio	2.058	2.058
Taper Ratio	0.2451	0.2451
Chords		
Root BP108	462.40	9.8420
Tip $1.00 \frac{b}{2}$	137.85	2.41238
MAC	393.03	6.87802
Fus. Sta. of .25 MAC	1185.31	20.74292
W.P. of .25 MAC	300.20	5.25350
B.L. of .25 MAC	251.76	2.51580
Airfoil Section (Rockwell Mod NASA)		
XXXX-64		
Root $\frac{b}{2}$ =	0.10	0.10
Tip $\frac{b}{2}$ =	0.12	0.12
Data for (1) of (2) Sides		
Leading Edge Cuff Ft^2	120.33	0.03685
Planform Area	560.0	9.800
Leading Edge Intersects Fus M. L. @ Sta	1035.0	18.11250
Leading Edge Intersects Wing @ Sta		

TABLE IV. THERMOCOUPLE GAUGE COORDINATES*

FUSELAGE

Gauge No.	X/L	X	Y	ϕ
1	.005	.113	0	
2	.020	.452	0	
3	.040	.903	0	
4	.012	.282	0	
6	.060	1.355	0	
7	.080	1.806	0	
8	.100	2.258	0	
10	.150	3.387	0	
11	.150	3.387	-	20°
12	.150	3.387	-	30°
13	.150	3.387	-	45.5°
16	.200	4.516	0	
17	.200	4.516	.875	
19	.225	5.081	0	
20	.250	5.645	0	
22	.275	6.210	0	
23	.300	6.774	0	
24	.300	6.774	1.312	
25	.300	6.774	-	40°
26	.300	6.774	-	45°
29	.325	7.339	0	
30	.350	7.898	0	
31	.400	9.032	0	
32	.400	9.032	.875	
33	.450	10.161	0	
34	.500	11.290	0	
35	.500	11.290	.875	
37	.550	12.419	0	
38	.600	13.548	0	
39	.600	13.548	.875	
40	.650	14.677	0	
41	.700	15.806	0	
43	.750	16.935	0	
44	.800	18.064	0	
45	.800	18.064	.875	
46	.850	19.193	0	
47	.900	20.322	0	
48	.900	20.322	.875	
49	.950	21.451	0	
50	1.000	22.580	0	
51	1.000	22.580	1.750	

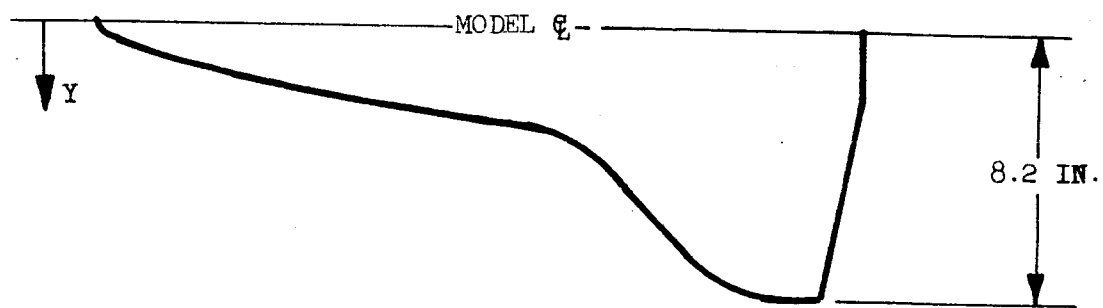
WING

Gauge No.	X/C	X	Y/b/2	Y
52	.082	9.032	0.25	2.049
53	.302	11.290		
54	.447	13.548		
55	.591	15.806		
56	.736	18.064		
57	.881	20.322	Y	Y
58	.050	13.548	0.40	3.278
59	.100	14.022		
60	.200	14.910		
61	.300	15.806		
62	.560	18.064		
63	.700	19.307		
64	.900	21.066	Y	Y
65	.176	15.806	0.50	4.098
66	.484	18.064		
67	.900	21.076	Y	Y
68	.100	15.995	0.60	4.918
69	.200	16.625		
70	.430	18.064		
71	.600	19.145		
72	.800	20.405		
73	.900	21.035	Y	Y
74	.100	17.084	0.75	6.147
75	.300	18.064		
76	.500	19.022	Y	Y
77	.700	19.992	0.75	6.147
78	.900	20.962	Y	Y
79	.100	17.801	0.85	6.967
80	.300	18.578		
81	.500	19.355	Y	Y
82	.700	19.618	0.50	4.098
83	.100	18.792	0.95	7.786
84	.500	19.762		
85	.900	20.871	Y	Y

* See Figure 1 for definition of X, Y, & ϕ

TABLE V. LOCAL MODEL SURFACE ANGLES

GAUGE NO.	θ (DEGREES)	GAUGE NO.	θ (DEGREES)
1	52.25	49	-3.5
2	20.5	50	-4.5
3	13.5	51	-4.5
4	27.5	52	5.35
6	10.0	53	2.5
7	7.25	54	2.65
8	5.50	55	2.25
10	3.25	56	0
11	3.25	57	-0.75
12	3.25	58	9.3
16	2.0	59	6.7
17	2.0	60	5.65
19	1.5	61	4.65
20	1.25	62	2.85
22	1.0	63	1.4
23	1.0	64	-4.75
24	1.0	65	4.55
25	1.0	66	5.0
26	1.0	67	-5.3
29	1.0	68	4.95
30	1.0	69	4.8
31	1.0	70	5.4
32	1.0	71	3.5
33	1.0	72	-1.55
34	1.0	73	-5.1
35	1.0	74	5.3
37	1.0	75	5.25
38	1.0	76	4.7
39	1.0	77	1.5
40	1.0	78	-4.8
41	1.0	79	5.6
43	1.0	80	5.35
44	1.0	81	4.6
45	1.0	82	1.85
46	-0.6	83	5.8
47	-2.0	84	4.4
48	-2.0	85	-4.3



DIMENSIONS ARE
NOMINAL VALUES

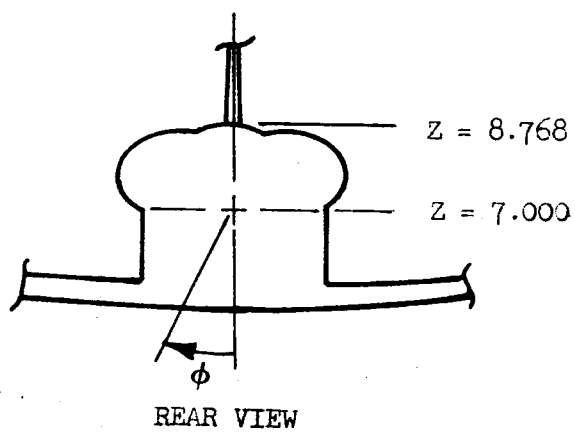
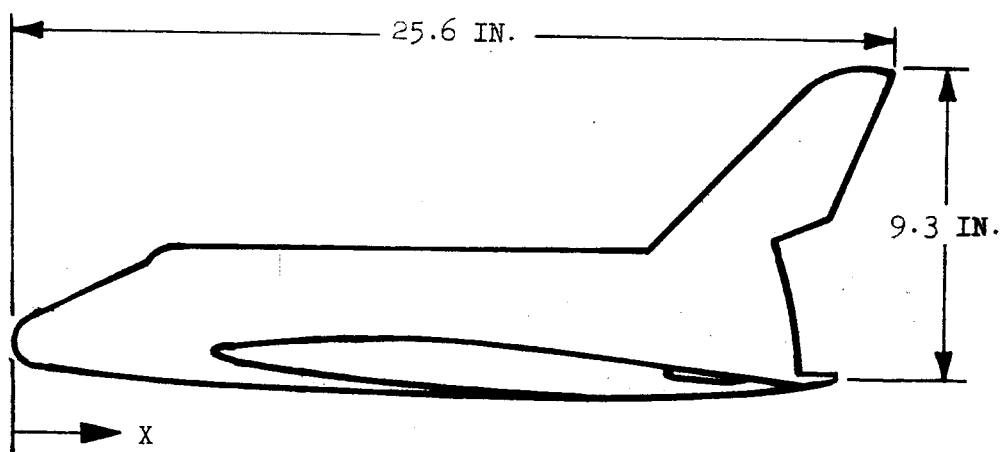


Figure 1. - Model 29-0 Nominal Dimensions.

Note: Shown 10 x scale

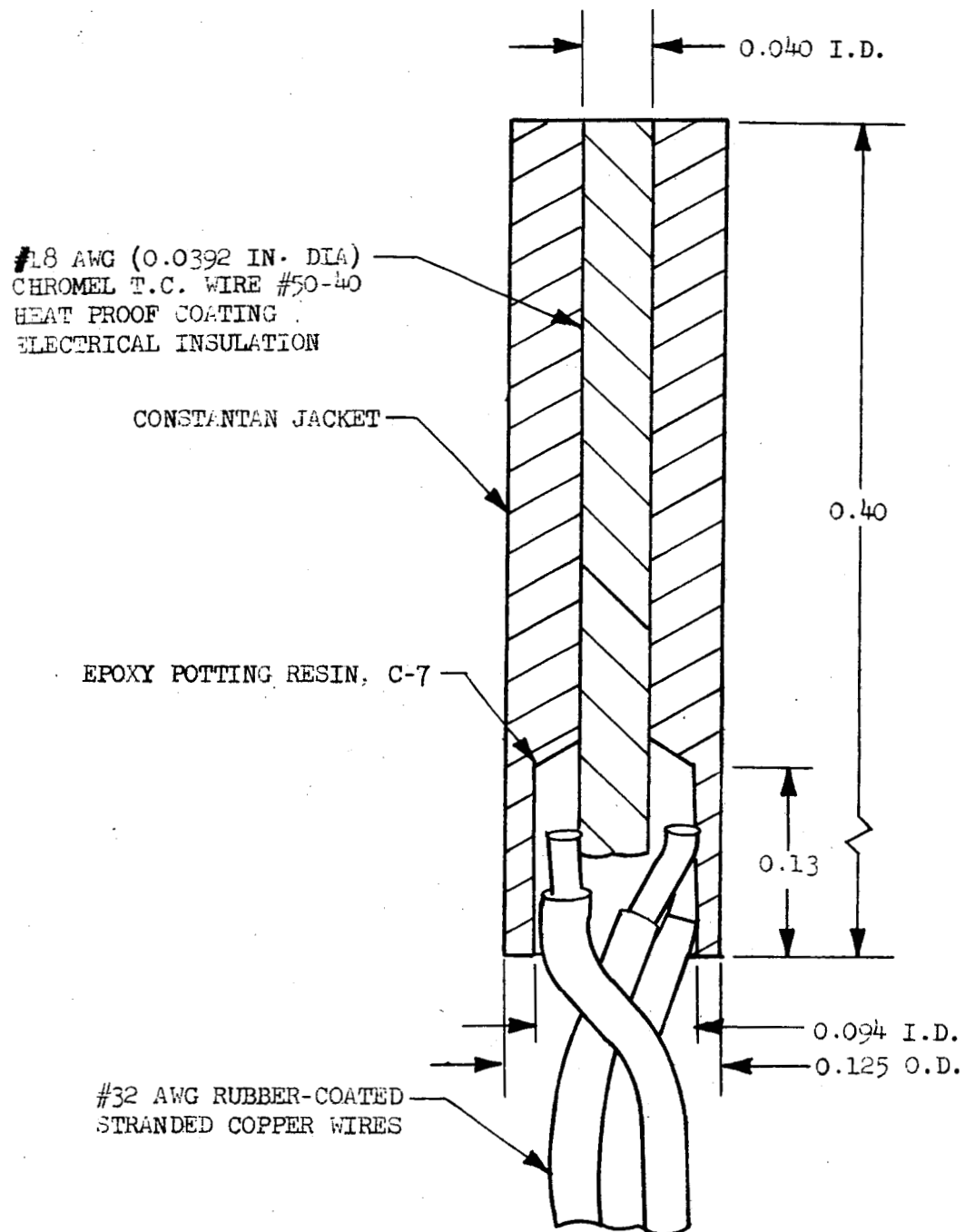
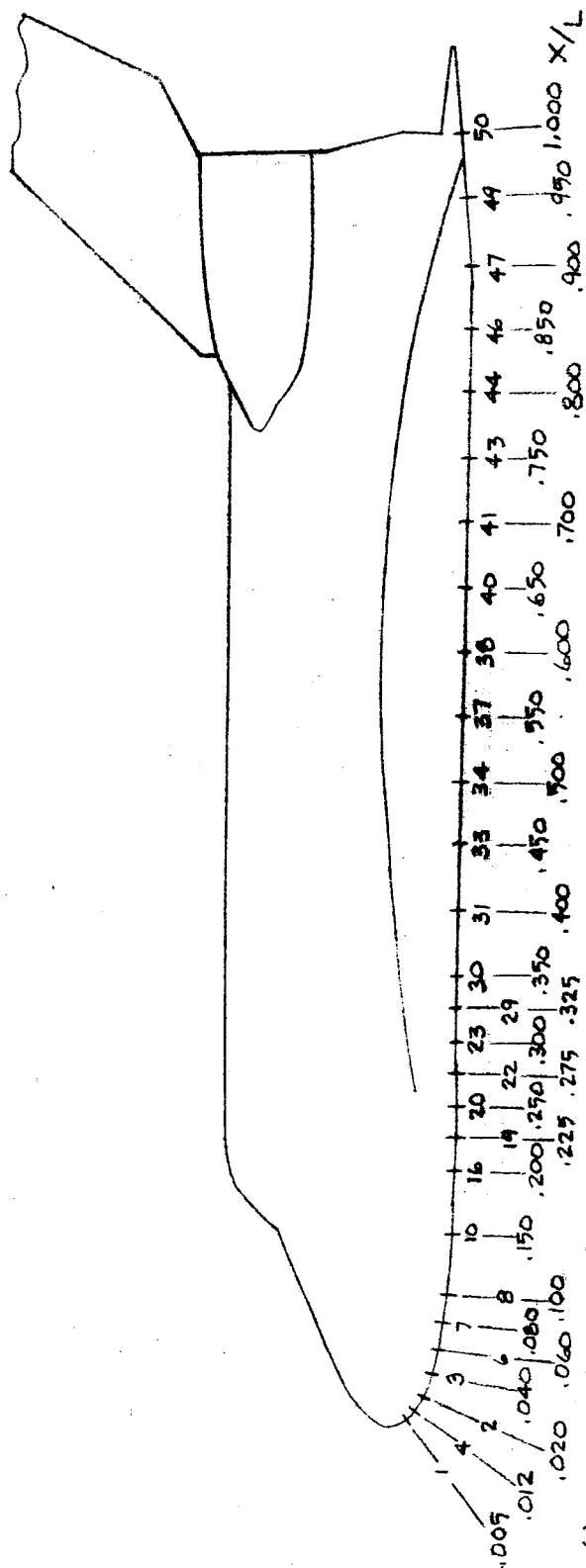


Figure 2. - Chromel - Constantan Coaxial Surface Thermocouple.



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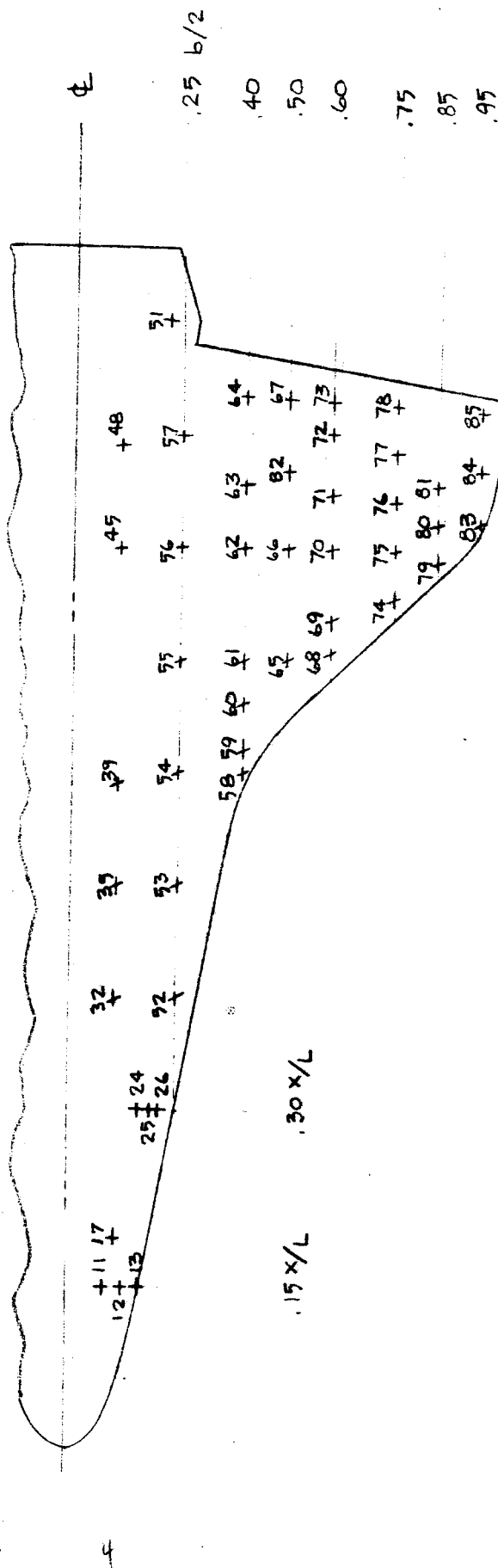


Figure 3. - Thermocouple Gauge Locations.

APPENDIX
TABULATED SOURCE DATA

11/12/73

AEUC (ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21HA

GROUP	CONF	MODEL	MACH	NO	PU	PSIA	TO	DEG	R	ALPHA	MODEL	ALPHA	SECTION	ALPHA	PHEBEND	HOLL	MODEL	YAW
1	1		8.00		861.8	1351	24.88	5.12	30.00	180	0							
T-1AF	P-1AF	Q-1AF	V-1AF	RHO-1AF	MU-1AF	RE/FT	HREF-FR	SIFR	SWITCH									
(DEC R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT ³)	(LB-SEC/FT ²)	(FT-1)	(HREF-FR)	(SIFR)	(HREF-FR)									
97.6	0.88	3.95	379	7.564E-05	7.883E-08	3.72E 06	4.917E-02	2.104E-02	1									
GAGE	T4	CDOT	H(10)	H(10)/HREF	H(10)	H(10)/HREF	H(10)/HREF	H(10)/HREF	H(10)/HREF									
1	541.1	3.747	4.674E-03	0.951	5.610E-03	0.1141	4.150E-03	0.044	0									
2	577.6	16.944	2.193E-02	0.460	2.657E-02	0.5404	2.269E-02	0.4616	0									
3	541.4	11.654	1.478E-02	0.3001	1.780E-02	0.3420	1.591E-02	0.3235	0									
4	549.4	6.957	8.678E-03	0.1765	1.043E-02	0.2122	9.716E-03	0.1976	0									
5	543.8	4.970	6.155E-03	0.1252	7.392E-03	0.1503	7.017E-03	0.1427	0									
6	541.3	3.941	4.865E-03	0.0990	5.840E-03	0.1188	5.623E-03	0.1144	0									
7	519.4	3.388	4.175E-03	0.0849	5.009E-03	0.1019	4.866E-03	0.0990	0									
8	517.0	2.391	2.937E-03	0.0597	3.521E-03	0.0716	3.458E-03	0.0703	0									
9	543.3	4.586	5.676E-03	0.1154	6.816E-03	0.1386	6.493E-03	0.1361	0									
10	518.1	3.132	3.852E-03	0.0783	4.619E-03	0.0939	4.537E-03	0.0923	0									
11	516.7	2.175	2.670E-03	0.0543	3.201E-03	0.0651	3.163E-03	0.0643	0									
12	519.4	3.217	3.962E-03	0.0806	4.754E-03	0.0967	4.696E-03	0.0955	0									
13	516.4	2.089	2.564E-03	0.0522	3.074E-03	0.0625	3.033E-03	0.0617	0									
14	516.6	1.945	2.413E-03	0.0491	2.892E-03	0.0588	2.868E-03	0.0583	0									
15	516.3	1.871	2.248E-03	0.0467	2.753E-03	0.0560	2.732E-03	0.0556	0									
16	516.3	1.849	2.249E-03	0.0462	2.720E-03	0.0553	2.700E-03	0.0549	0									
17	540.3	3.020	3.722E-03	0.0757	4.466E-03	0.0908	4.433E-03	0.0902	0									
18	541.0	3.419	4.270E-03	0.0851	4.846E-03	0.0986	4.810E-03	0.0978	0									
19	516.7	2.273	2.838E-03	0.0521	3.065E-03	0.0630	3.027E-03	0.0622	0									
20	516.7	1.800	2.210E-03	0.0450	2.650E-03	0.0539	2.630E-03	0.0535	0									
21	517.1	1.799	2.209E-03	0.0449	2.649E-03	0.0539	2.629E-03	0.0535	0									
22	516.9	1.635	2.008E-03	0.0408	2.408E-03	0.0490	2.390E-03	0.0486	0									
23	518.1	2.078	2.556E-03	0.0520	3.065E-03	0.0623	3.042E-03	0.0619	0									
24	517.0	1.589	1.952E-03	0.0397	2.340E-03	0.0476	2.323E-03	0.0472	0									
25	516.6	1.553	1.906E-03	0.0388	2.285E-03	0.0465	2.264E-03	0.0461	0									
26	516.8	1.709	2.094E-03	0.0427	2.515E-03	0.0512	2.496E-03	0.0508	0									
27	516.8	1.549	1.902E-03	0.0387	2.240E-03	0.0464	2.263E-03	0.0460	0									
28	517.2	1.561	1.914E-03	0.0390	2.270E-03	0.0469	2.243E-03	0.0464	0									
29	517.6	1.664	2.045E-03	0.0416	2.452E-03	0.0499	2.434E-03	0.0495	0									
30	517.4	1.540	1.942E-03	0.0395	2.328E-03	0.0474	2.311E-03	0.0470	0									
31	518.4	1.665	2.044E-03	0.0417	2.457E-03	0.0500	2.439E-03	0.0496	0									
32	518.6	1.877	2.304E-03	0.0470	2.770E-03	0.0563	2.749E-03	0.0559	0									
33	540.7	2.499	3.043E-03	0.0627	3.700E-03	0.0753	3.672E-03	0.0747	0									
34	541.3	2.697	3.330E-03	0.0677	3.997E-03	0.0813	3.967E-03	0.0807	0									
35	543.1	3.316	4.104E-03	0.0835	4.928E-03	0.1002	4.926E-03	0.1002	0									
36	542.9	3.412	4.221E-03	0.0859	5.069E-03	0.1031	5.099E-03	0.1037	0									
37	543.4	3.646	4.563E-03	0.0928	5.440E-03	0.1115	5.413E-03	0.1121	0									
38	542.6	3.398	4.202E-03	0.0855	5.045E-03	0.1026	5.104E-03	0.1039	0									
39	543.9	3.785	4.684E-03	0.0954	5.631E-03	0.1145	5.726E-03	0.1164	0									
40	547.4	4.871	6.060E-03	0.1233	7.245E-03	0.1482	7.408E-03	0.1507	0									
41																		
42																		
43																		
44																		
45																		
46																		
47																		
48																		
49																		
50																		
51																		

11/12/73

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP	CONFIG	MODEL	MACH	NU	PO, PSTA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
1	1		8.00		861.8	1351	24.88	5.12	30.00	180		0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (R=.0175FT) 4.917E-02	STFR (H=.0175FT) 2.104E-02	SWITCH POSITION	2Y/B		
97.9	.088	3.855	3879	7.564E-05	7.883E-08	3.722E 06			1			
GAGE	TM	CDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.5TO)/HREF	H(TAW)	X/C				
52	541.6	3.198	3.950E-03	.0803	4.742E-03	.0964	4.609E-03	.0937	.0820	.2500		
53	541.1	2.674	3.301E-03	.0671	3.961E-03	.0806	3.904E-03	.0794	.0794	.2500		
54	538.6	1.910	2.351E-03	.0478	2.820E-03	.0573	2.777E-03	.0565	.4470	.2500		
55	538.8	1.494	2.332E-03	.0474	2.797E-03	.0569	2.760E-03	.0561	.5910	.2500		
56	545.7	4.549	5.648E-03	.1149	6.786E-03	.1380	6.785E-03	.1376	.7360	.2500		
57	548.6	5.565	6.934E-03	.1410	8.337E-03	.1696	8.341E-03	.1696	.810	.2500		
58	557.1	7.598	9.569E-03	.1946	1.153E-02	.2345	1.098E-02	.2232	.0500	.4000		
59	550.6	5.322	6.647E-03	.1352	7.997E-03	.1626	7.718E-03	.1570	.1000	.4000		
60	545.2	3.671	4.554E-03	.0926	5.471E-03	.1113	5.310E-03	.1080	.2000	.4000		
61	544.7	3.366	4.173E-03	.0849	5.013E-03	.1020	4.890E-03	.0994	.3000	.4000		
62	548.4	4.803	5.983E-03	.1217	7.194E-03	.1463	7.077E-03	.1439	.5600	.4000		
63	549.3	5.890	7.345E-03	.1494	8.834E-03	.1797	8.750E-03	.1780	.7000	.4000		
64	545.3	4.504	5.700E-03	.1159	6.848E-03	.1393	6.971E-03	.1418	.9000	.4000		
65	552.1	5.054	6.325E-03	.1286	7.612E-03	.1548	7.425E-03	.1510	.1760	.5000		
66	550.8	5.143	6.426E-03	.1307	7.731E-03	.1572	7.525E-03	.1530	.4840	.5000		
67	543.3	6.649	8.354E-03	.1700	1.006E-02	.2046	9.945E-03	.2023	.7000	.5000		
68	545.5	4.457	5.532E-03	.1125	6.647E-03	.1352	6.781E-03	.1379	.9000	.5000		
69	547.8	4.252	5.252E-03	.1076	6.362E-03	.1294	6.195E-03	.1260	.1000	.6000		
70	542.8	2.182	2.698E-03	.0549	3.240E-03	.0659	3.158E-03	.0642	.2000	.6000		
71	556.1	7.058	8.877E-03	.1805	1.069E-02	.2175	1.039E-02	.2112	.4300	.6000		
72	553.0	11.050	1.412E-02	.2871	1.706E-02	.3471	1.672E-02	.3401	.6000	.6000		
73	548.3	6.474	8.111E-03	.1650	9.764E-03	.1986	9.403E-03	.1994	.8000	.6000		
74	540.8	5.361	6.676E-03	.1358	8.027E-03	.1633	8.183E-03	.1664	.9000	.6000		
75	566.8	11.635	1.483E-02	.3017	1.792E-02	.3645	1.740E-02	.3540	.1000	.7500		
76	574.0	13.075	1.682E-02	.3421	2.036E-02	.4141	1.978E-02	.4022	.3000	.7500		
77	565.7	10.596	1.349E-02	.2743	1.629E-02	.3313	1.587E-02	.3228	.5000	.7500		
78	558.6	5.074	1.145E-02	.2328	1.380E-02	.2807	1.366E-02	.2778	.7000	.7500		
79	557.9	8.066	1.017E-02	.2068	1.226E-02	.2493	1.248E-02	.2538	.9000	.7500		
80	541.1	5.891	1.252E-02	.2546	1.510E-02	.3071	1.465E-02	.2979	.1000	.8500		
81	557.6	7.885	9.935E-03	.2021	1.197E-02	.2435	1.163E-02	.2366	.3000	.8500		
82	547.4	11.198	1.429E-02	.2905	1.726E-02	.3511	1.682E-02	.3422	.5000	.8500		
83	562.3	5.140	1.159E-02	.2356	1.398E-02	.2843	1.355E-02	.2755	.1000	.9500		
84	547.7	4.698	5.848E-03	.1189	7.030E-03	.1430	6.864E-03	.1396	.5000	.9500		
85	555.4	7.105	8.927E-03	.1816	1.075E-02	.2187	1.093E-02	.2222	.9000	.9500		

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP	CONFID	PROFL	MACH NO	PHI/PSIA	TO/DEG R	ALPHA-MODEFL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL MODEL	YAW
2	1		8.00	860.5	1350	30.04	-0.04	30.00	180	-0
I-TNF (DEG R)	P-TNF (PSIA)	Q-TNF (PSIA)	V-TNF (FT/SEC)	RHO-TNF (SLUGS/FT ³)	MU-TNF (LH-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H= .0175FT) (H= .0175FT) POSITION	SIFR	SWITCH	
97.8	0.88	3.549	3076	7.562E-05	7.873E-02	3.723F 06	4.912E-02	2.104E-02		
GAGE	TM	UDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/L	PMI	2Y/8
1	499.4	4.626	5.442E-01	.1108	6.469E-03	.1317	4.709E-03	.0959	.0050	0
2	511.8	16.900	2.311E-02	.4705	2.768E-02	.5635	2.316E-02	.4714	.0120	0
3	513.2	13.255	1.565E-02	.3227	1.890E-02	.3947	1.653E-02	.3365	.0200	0
4	500.4	8.428	9.926E-01	.2021	1.180E-02	.2403	1.075E-02	.2188	.0400	0
5	494.5	6.342	7.418E-03	.1510	8.808E-03	.1793	8.175E-03	.1664	.0600	0
6	492.3	5.177	6.040E-03	.1230	7.164E-03	.1459	6.748E-03	.1374	.0800	0
7	492.0	4.436	5.173E-03	.1053	6.139E-03	.1250	5.829E-03	.1187	.1000	0
8	493.3	3.256	3.802E-03	.0774	4.514E-03	.0919	4.333E-03	.0882	.1500	0
9	502.6	5.431	6.531E-03	.1330	7.769E-03	.1582	7.453E-03	.1517	.30.0000	0
10	496.1	3.427	4.015E-03	.0817	4.764E-03	.0971	4.578E-03	.0932	.45.5000	0
11	496.7	2.989	3.505E-03	.0714	4.164E-03	.0848	4.020E-03	.0818		0
12	511.6	3.817	4.501E-03	.0916	5.353E-03	.1090	5.167E-03	.1052		.1070
13	496.7	2.845	3.336E-03	.0679	3.963E-03	.0807	3.822E-03	.0778		0
14	495.2	2.837	3.320E-03	.0676	3.943E-03	.0803	3.821E-03	.0778		0
15	497.6	2.744	3.214E-03	.0654	3.817E-03	.0777	3.703E-03	.0754		0
16	497.7	2.700	3.170E-03	.0645	3.768E-03	.0767	3.653E-03	.0744		0
17	503.3	3.705	4.378E-03	.0891	5.209E-03	.1060	5.051E-03	.1028		0
18	505.0	3.957	4.585E-03	.0954	5.576E-03	.1135	5.404E-03	.1101		0
19	505.9	3.944	4.723E-03	.0942	5.622E-03	.1145	5.452E-03	.1110		0
20	501.0	2.544	3.045E-03	.0620	3.621E-03	.0737	3.512E-03	.0715		0
21	503.2	2.576	3.044E-03	.0620	3.622E-03	.0737	3.512E-03	.0715		0
22	506.6	2.350	2.788E-03	.0568	3.320E-03	.0676	3.219E-03	.0655		0
23	510.7	2.833	3.377E-03	.0688	4.025E-03	.0819	3.902E-03	.0794		0
24	511.0	2.293	2.735E-03	.0557	3.259E-03	.0644	3.160E-03	.0643		.1070
25	514.3	2.351	2.814E-03	.0573	3.351E-03	.0683	3.254E-03	.0662		0
26	516.8	2.350	2.822E-03	.0578	3.348E-03	.0686	3.264E-03	.0665		0
27	518.5	2.360	2.840E-03	.0578	3.391E-03	.0690	3.286E-03	.0669		.1070
28	522.9	2.646	3.202E-03	.0652	3.826E-03	.0770	3.707E-03	.0755		0
29	525.2	2.614	3.171E-03	.0645	3.791E-03	.0772	3.673E-03	.0748		0
30	526.9	3.020	3.672E-03	.0748	4.392E-03	.0894	4.255E-03	.0866		0
31	531.9	3.668	4.487E-03	.0913	5.374E-03	.1094	5.205E-03	.1060		0
32	535.6	4.343	5.336E-03	.1086	6.396E-03	.1302	6.194E-03	.1261		0
33	542.9	5.001	7.440E-03	.1515	8.935E-03	.1819	8.450E-03	.1761		0
34	543.3	5.535	8.865E-03	.1398	8.245E-03	.1779	7.982E-03	.1625		.1070
35	547.7	7.092	8.845E-03	.1801	1.064E-02	.2165	1.034E-02	.2112		0
36	546.4	6.734	8.385E-03	.1707	1.008E-02	.2052	9.800E-03	.2016		0
37	546.3	6.350	7.906E-03	.1609	9.502E-03	.1934	9.334E-03	.1900		.1070
38	543.4	6.265	7.776E-03	.1583	9.340E-03	.1901	9.241E-03	.1881		0
39	542.7	6.356	7.874E-03	.1604	9.460E-03	.1926	9.403E-03	.1914		0
40	545.3	6.531	8.121E-03	.1653	9.758E-03	.1987	9.699E-03	.1975		.2140

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-210A

GROUP CONFIG MODEL MACH NO PO, PSTA TO, DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PRÉBEND ROLL MODEL YAW
2 1 8.00 860.5 1350 30.04 -0.04 30.00 180 -0

T-1NF (DEG R)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT ³)	MU-1NF (LB-SEC/FT ²)	RE/FT (FT-1)	MREF-FR (H=.0175FT) (H=.0175FT)	STFR (H=.0175FT) (H=.0175FT)	SWITCH POSITION
91.8	.088	3.949	3876	7.502E-05	7.873E-08	3.723E 05	4.912E-02	2.104E-02	1
GAGE	TW	GOOT	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(TAW)	X/C	2Y/B
52	515.8	3.590	4.304E-03	.0877	5.138E-03	.1046	4.874E-03	.0992	.2500
53	522.3	3.260	3.941E-03	.0802	4.709E-03	.0959	4.529E-03	.0922	.2500
54	526.6	2.528	3.072E-03	.0625	3.675E-03	.0748	3.532E-03	.0719	.2500
55	533.0	2.450	3.490E-03	.0711	4.181E-03	.0851	4.025E-03	.0819	.2500
56	546.2	5.901	7.457E-03	.1518	8.963E-03	.1825	8.719E-03	.1775	.2500
57	549.9	7.215	9.022E-03	.1837	1.085E-02	.2210	1.060E-02	.2157	.2500
58	543.3	7.320	9.079E-03	.1848	1.090E-02	.2220	1.011E-02	.2057	.2500
59	539.1	5.457	6.734E-03	.1371	8.090E-03	.1645	7.597E-03	.1547	.4000
60	536.5	3.961	4.871E-03	.0992	5.841E-03	.1189	5.524E-03	.1125	.4000
61	539.1	3.801	4.690E-03	.0955	5.627E-03	.1146	5.348E-03	.1089	.4000
62	547.5	5.151	6.422E-03	.1307	7.722E-03	.1572	7.403E-03	.1507	.4000
63	548.4	6.516	8.138E-03	.1657	9.788E-03	.1993	9.454E-03	.1925	.4000
64	544.2	5.534	6.872E-03	.1399	8.255E-03	.1681	8.215E-03	.1672	.4000
65	546.7	5.449	6.784E-03	.1382	8.160E-03	.1661	7.755E-03	.1579	.5000
66	546.0	4.308	5.354E-03	.1091	6.440E-03	.1311	6.107E-03	.1243	.5000
67	548.4	5.627	7.024E-03	.1430	8.446E-03	.1720	8.139E-03	.1657	.5000
68	542.0	4.599	5.695E-03	.1159	6.838E-03	.1342	6.422E-03	.1389	.5000
69	548.1	5.896	7.357E-03	.1498	8.847E-03	.1801	8.390E-03	.1708	.6000
70	549.4	4.991	6.230E-03	.1268	7.492E-03	.1525	7.110E-03	.1448	.6000
71	552.8	4.845	6.057E-03	.1233	7.286E-03	.1483	6.892E-03	.1403	.6000
72	545.5	6.201	7.742E-03	.1584	9.369E-03	.1907	8.950E-03	.1822	.6000
73	542.8	4.373	5.439E-03	.1107	6.537E-03	.1331	6.407E-03	.1304	.6000
74	593.7	4.205	5.212E-03	.1061	6.259E-03	.1274	6.238E-03	.1270	.6000
75	551.2	20.213	2.674E-02	.5445	3.256E-02	.6628	3.070E-02	.6249	.7500
76	551.9	4.672	5.852E-03	.1191	7.043E-03	.1434	6.667E-03	.1357	.7500
77	546.9	4.750	5.955E-03	.1212	7.168E-03	.1459	6.804E-03	.1385	.7500
78	548.7	5.441	6.779E-03	.1340	8.149E-03	.1659	7.867E-03	.1602	.7500
79	576.6	8.186	1.035E-02	.2107	1.248E-02	.2541	1.242E-02	.2529	.7500
80	583.4	14.625	1.892E-02	.3852	2.292E-02	.4667	2.161E-02	.4400	.8500
81	545.8	15.786	2.060E-02	.4195	2.501E-02	.5092	2.360E-02	.4804	.8500
82	565.0	16.876	2.210E-02	.4499	2.684E-02	.5464	2.542E-02	.5176	.8500
83	567.8	10.201	1.216E-02	.2475	1.468E-02	.2989	1.384E-02	.2818	.9500
84	567.8	10.201	1.305E-02	.2657	1.577E-02	.3211	1.498E-02	.3049	.9500
85	565.5	5.980	1.273E-02	.2591	1.538E-02	.3130	1.527E-02	.3108	.9500

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AED(IAHO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP	CONFID	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
3	1		8.00	861.0	1346	34.95	-4.95	30.00	180		-0
T-INF (DEG R)	P-INF (PSIA)	U-INF (FT/SEC)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LH-SEC/FT2)	RE/FT (FT-1)	HREF-FR (HREF-0175FT)	SIFR (HREF-0175FT)	SWITCH	POSITION	
97.5	0.088	3.951	3471	7.586E-05	7.853E-08	3.740E 06	4.911E-02	2.100E-02	1		
GAGE	TV	COOT	HITO	H(TOI)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/L	PHI	2Y/8	
1	518.9	5.346	6.463E-03	.1316	7.720E-03	.1572	5.407E-03	.1101	.0050	0	
2	566.3	15.023	2.439E-02	.4967	2.949E-02	.6003	2.370E-02	.4826	.0120	0	
3	549.6	13.708	1.721E-02	.3505	2.071E-02	.4218	1.747E-02	.3556	.0200	0	
4	536.6	9.024	1.115E-02	.2270	1.337E-02	.2723	1.178E-02	.2399	.0400	0	
5	529.9	6.969	8.540E-03	.1739	1.023E-02	.2082	9.203E-03	.1874	.0500	0	
6	526.1	5.837	7.119E-03	.1449	8.517E-03	.1734	7.786E-03	.1585	.0800	0	
7	522.6	5.056	6.140E-03	.1250	7.340E-03	.1494	6.777E-03	.1380	.1000	0	
8	514.6	3.808	4.689E-03	.0955	5.066E-03	.1139	5.231E-03	.1065	.1500	0	
9	520.0	6.269	7.589E-03	.1545	9.066E-03	.1846	8.473E-03	.1725	.1500	0	
10	510.9	3.534	4.232E-03	.0862	5.046E-03	.1027	4.720E-03	.0961	.1500	0	
11	511.3	3.786	4.548E-03	.0926	5.422E-03	.1104	5.105E-03	.1039	.2000	0	
12	513.1	4.605	5.528E-03	.1126	6.594E-03	.1343	6.206E-03	.1264	.2000	0	
13	509.4	3.076	4.394E-03	.0895	5.237E-03	.1066	4.925E-03	.1003	.2250	.1070	
14	504.8	3.562	4.234E-03	.0862	5.041E-03	.1026	4.766E-03	.0970	.2500	0	
15	505.1	3.414	4.060E-03	.0827	4.833E-03	.0984	4.575E-03	.0932	.2750	0	
16	509.6	3.288	3.907E-03	.0796	4.651E-03	.0947	4.403E-03	.0897	.3000	0	
17	509.4	4.354	5.204E-03	.1080	6.202E-03	.1263	5.869E-03	.1195	.3000	0	
18	510.0	4.731	5.658E-03	.1152	6.744E-03	.1373	6.382E-03	.1299	.3000	0	
19	509.7	4.702	5.622E-03	.1145	6.700E-03	.1364	6.340E-03	.1291	.3000	0	
20	506.3	3.124	3.720E-03	.0757	4.430E-03	.0902	4.193E-03	.0854	.3250	0	
21	506.9	3.078	3.668E-03	.0747	4.368E-03	.0889	4.135E-03	.0842	.3500	0	
22	508.8	3.046	3.639E-03	.0741	4.336E-03	.0883	4.103E-03	.0835	.4000	0	
23	511.4	3.236	3.878E-03	.0790	4.623E-03	.0941	4.374E-03	.0891	.4000	0	
24	512.5	3.128	3.753E-03	.0764	4.476E-03	.0911	4.234E-03	.0862	.4500	.1070	
25	514.6	3.241	3.898E-03	.0794	4.651E-03	.0947	4.400E-03	.0896	.5000	0	
26	516.3	3.017	3.636E-03	.0740	4.340E-03	.0884	4.105E-03	.0836	.5000	.1070	
27	518.6	3.519	4.258E-03	.0867	5.087E-03	.1036	4.810E-03	.0979	.5500	0	
28	525.4	4.140	5.093E-03	.1037	6.092E-03	.1240	5.758E-03	.1172	.6000	0	
29	527.4	4.191	5.120E-03	.1042	6.127E-03	.1248	5.790E-03	.1179	.6000	0	
30	531.5	5.120	6.280E-03	.1240	7.530E-03	.1533	7.114E-03	.1448	.6500	.1070	
31	540.4	6.512	8.217E-03	.1672	9.861E-03	.2008	9.308E-03	.1895	.7000	0	
32	546.4	7.349	9.215E-03	.1876	1.108E-02	.2256	1.045E-02	.2129	.7500	0	
33	557.2	8.347	1.186E-02	.2415	1.330E-02	.2612	1.248E-02	.2445	.8000	0	
34	568.6	9.549	1.218E-02	.2679	1.469E-02	.2991	1.384E-02	.2745	.8000	.1070	
35	562.4	10.038	1.281E-02	.2608	1.547E-02	.3149	1.470E-02	.2819	.8500	0	
36	559.6	8.753	1.113E-02	.2266	1.343E-02	.2734	1.286E-02	.2618	.9000	0	
37	550.1	8.537	1.085E-02	.2209	1.309E-02	.2664	1.253E-02	.2552	.9000	.1070	
38	556.7	7.974	1.010E-02	.2057	1.218E-02	.2480	1.176E-02	.2394	.9500	0	
39	556.1	7.308	1.001E-02	.2038	1.207E-02	.2457	1.171E-02	.2384	1.0000	0	
40	557.1	7.806	9.895E-03	.2015	1.193E-02	.2429	1.158E-02	.2357	1.0000	.2140	

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AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP 3 CONFIG MODEL MACH NO 8.00 P0:PSIA 861.0 T0:DEG R 1346 ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW
 97.5 1 0.086 3.551 171 7.586E-05 MU-INF (LH-SEC/FT2) 7.853E-06 RE/FT (FT-1) 3.740E-06 HREF-FR (H=.0175FT) 4.911E-02 SIFR (H=.0175FT) 2.100E-02 SWITCH POSITION 1

GAGE	TW	CDOT	H(T0)	H(T0)/HREF	H(.9T0)	H(.9T0)/HREF	MU-INF (LH-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	SIFR (H=.0175FT)	2Y/B
52	517.1	4.012	4.839E-03	.095	5.778E-03	.1176	5.342E-03	.1088	.0820	.0820	.2500
53	522.7	3.449	4.432E-03	.0902	5.298E-03	.1079	4.970E-03	.1012	.3020	.3020	.2500
54	529.5	3.595	4.403E-03	.0896	5.272E-03	.1073	4.938E-03	.1005	.4470	.4470	.2500
55	544.1	6.043	7.535E-03	.1534	9.054E-03	.1444	8.488E-03	.1728	.5910	.5910	.2500
56	542.6	10.060	1.284E-02	.2614	1.950E-02	.2875	1.469E-02	.2990	.7360	.7360	.2500
57	562.2	4.166	1.169E-02	.2381	1.412E-02	.2275	1.343E-02	.2734	.8810	.8810	.2500
58	544.0	7.306	9.109E-03	.1855	1.095E-02	.2229	9.869E-03	.2009	.0500	.0500	.2500
59	541.6	6.073	7.549E-03	.1537	9.066E-03	.1846	8.297E-03	.1689	.1000	.1000	.2500
60	542.0	5.118	6.366E-03	.1296	7.646E-03	.1557	7.037E-03	.1433	.2000	.2000	.2500
61	547.0	5.710	7.147E-03	.1455	8.595E-03	.1750	7.950E-03	.1619	.3000	.3000	.2500
62	544.6	9.275	1.187E-02	.2417	1.434E-02	.2520	1.337E-02	.2723	.5600	.5600	.2500
63	544.8	9.770	1.250E-02	.2546	1.511E-02	.3076	1.420E-02	.2891	.7000	.7000	.2500
64	557.9	7.675	9.734E-03	.1983	1.174E-02	.2391	1.141E-02	.2323	.9000	.9000	.2500
65	552.7	6.393	8.057E-03	.1641	9.704E-03	.1976	8.975E-03	.1827	.1740	.1740	.2500
66	580.4	7.142	9.154E-03	.1864	1.105E-02	.2249	1.018E-02	.2073	.4840	.4840	.2500
67	544.0	8.621	1.102E-02	.2245	1.332E-02	.2711	1.249E-02	.2542	.7000	.7000	.2500
68	556.7	7.064	8.948E-03	.1822	1.079E-02	.2196	1.051E-02	.2140	.9000	.9000	.2500
69	557.8	6.511	8.261E-03	.1682	1.162E-02	.2366	1.172E-02	.2182	.1000	.1000	.2500
70	564.7	7.692	9.844E-03	.2004	1.189E-02	.2421	1.093E-02	.2226	.2000	.2000	.2500
71	561.1	6.470	8.242E-03	.1678	9.948E-03	.2026	9.246E-03	.1883	.4300	.4300	.2500
72	548.3	6.027	7.651E-03	.1558	9.227E-03	.1879	8.814E-03	.1795	.6000	.6000	.2500
73	555.6	5.947	7.524E-03	.1532	9.069E-03	.1847	8.826E-03	.1797	.9000	.9000	.2500
74	572.3	10.606	1.371E-02	.2791	1.660E-02	.3379	1.525E-02	.3105	.1000	.1000	.2500
75	540.1	5.461	6.948E-03	.1415	8.384E-03	.1707	7.719E-03	.1571	.3000	.3000	.2500
76	561.1	5.298	6.750E-03	.1374	8.147E-03	.1659	7.521E-03	.1531	.5000	.5000	.2500
77	547.6	2.937	3.674E-03	.0749	4.424E-03	.0501	4.162E-03	.0847	.7000	.7000	.2500
78	546.8	5.077	6.433E-03	.1310	7.755E-03	.1579	7.536E-03	.1534	.9000	.9000	.2500
79	544.7	21.669	2.923E-02	.5952	3.571E-02	.7272	3.262E-02	.6641	.1000	.1000	.2500
80	594.8	13.716	1.802E-02	.3669	2.189E-02	.4457	2.007E-02	.4087	.3000	.3000	.2500
81	564.5	6.365	8.144E-03	.1658	9.839E-03	.2003	9.085E-03	.1850	.5000	.5000	.2500
83	593.0	13.210	1.731E-02	.3525	2.102E-02	.4280	1.923E-02	.3916	.1000	.1000	.2500
84	545.1	13.928	1.830E-02	.3727	2.224E-02	.4528	2.051E-02	.4175	.5000	.5000	.2500
85	573.5	10.504	1.360E-02	.2768	1.646E-02	.3752	1.594E-02	.3247	.9000	.9000	.2500

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AEDC(AMC, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21MA

GROUP	CONFID	MODEL	MACH NO	PU-PSIA	TO-DEG R	ALPHA-MODCL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
4	1		8.00	074.8	1336	24.89	5.11	30.00	180	0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H=.0175FT) (R=.0175FT) POSITION	STFR	SWITCH	
96.8	0.069	3.094	3457	5.989E-05	7.795E-06	2.963E-06	4.342E-02	2.342E-02	1	
GAGE	TM	U(FT)	H(FT)	H(TO)/HREF	H(-STO)	H(-STO)/HREF	H(TA*)/HREF	X/L	PHI	2Y/B
1	516.8	3.349	4.136E-03	.0953	4.942E-03	.1138	3.681E-03	.0050		0
2	557.7	15.155	1.947E-02	.4484	2.358E-02	.5413	2.013E-02	.0120		0
3	501.6	10.231	1.284E-02	.2967	1.549E-02	.3567	1.347E-02	.0200		0
4	510.5	6.131	7.010E-03	.1753	9.123E-03	.2101	8.504E-03	.0400		0
5	524.4	4.403	5.424E-03	.1250	6.498E-03	.1496	6.173E-03	.0600		0
6	522.1	3.544	4.344E-03	.1010	5.245E-03	.1204	5.053E-03	.0800		0
7	519.1	3.024	3.766E-03	.0854	4.431E-03	.1020	4.307E-03	.1000		0
8	512.4	2.077	2.523E-03	.0581	3.011E-03	.0694	2.959E-03	.1500		0
9	518.9	4.104	5.026E-03	.1158	6.009E-03	.1384	5.803E-03	.1500	30.0000	0
10	514.0	2.748	3.343E-03	.0770	3.992E-03	.0919	3.922E-03	.1500	45.5000	0
11	509.5	1.916	2.314E-03	.0534	2.764E-03	.0637	2.732E-03	.2000		0
12	512.3	2.832	3.434E-03	.0792	4.103E-03	.0945	4.055E-03	.2000		0
13	517.4	1.813	2.140E-03	.0504	2.610E-03	.0601	2.576E-03	.2250		0
14	513.1	1.743	2.022E-03	.0482	2.492E-03	.0574	2.471E-03	.2500		0
15	512.4	1.664	1.947E-03	.0460	2.374E-03	.0548	2.361E-03	.2750		0
16	512.4	1.614	1.940E-03	.0447	2.311E-03	.0532	2.294E-03	.3000		0
17	512.3	2.642	3.142E-03	.0733	3.792E-03	.0873	3.764E-03	.3000	34.0000	0
18	507.0	2.923	3.525E-03	.0812	4.203E-03	.0968	4.172E-03	.3000	40.0000	0
19	512.4	3.116	3.763E-03	.0867	4.487E-03	.1033	4.454E-03	.3000	45.0000	0
20	512.4	1.574	1.895E-03	.0436	2.256E-03	.0520	2.240E-03	.3250		0
21	513.2	1.544	1.854E-03	.0427	2.204E-03	.0509	2.192E-03	.3500		0
22	512.4	1.440	1.730E-03	.0398	2.061E-03	.0475	2.046E-03	.4000		0
23	512.4	1.409	1.714E-03	.0381	1.972E-03	.0454	1.958E-03	.4000		0
24	512.4	1.374	1.655E-03	.0365	1.893E-03	.0439	1.879E-03	.4500		0
25	512.4	1.344	1.622E-03	.0345	1.823E-03	.0414	1.809E-03	.5000		0
26	512.4	1.309	1.584E-03	.0366	1.895E-03	.0436	1.881E-03	.5500		0
27	515.0	1.244	1.544E-03	.0361	1.873E-03	.0431	1.859E-03	.6000		0
28	516.0	1.371	1.672E-03	.0385	1.997E-03	.0460	1.982E-03	.6000		0
29	514.7	1.231	1.505E-03	.0347	1.799E-03	.0414	1.786E-03	.6500		0
30	512.6	1.236	1.519E-03	.0350	1.814E-03	.0419	1.805E-03	.7000		0
31	525.7	1.174	1.414E-03	.0335	1.741E-03	.0401	1.728E-03	.7500		0
32	520.0	1.276	1.541E-03	.0364	1.846E-03	.0436	1.830E-03	.8000		0
33	519.2	1.269	1.573E-03	.0362	1.885E-03	.0434	1.870E-03	.8000		0
34	511.6	1.471	1.846E-03	.0421	2.192E-03	.0505	2.179E-03	.8500		0
35	512.0	1.503	1.869E-03	.0430	2.241E-03	.0516	2.225E-03	.9000		0
36	512.0	1.549	1.926E-03	.0444	2.310E-03	.0532	2.293E-03	.9500		0
37	512.2	1.494	1.846E-03	.0425	2.242E-03	.0510	2.224E-03	.9500		0
38	512.8	1.781	2.217E-03	.0511	2.640E-03	.0612	2.604E-03	1.0000		0
39	515.6	2.774	3.464E-03	.0744	4.114E-03	.0844	4.024E-03	1.0000		0

11/12/77

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VA352-218A

GROUP 4 CONFIG 1 MACH NO 8.00 PO, PSTA 674.8 TO, DEG R 1336 ALPHA-MODEL 24.89 ALPHA-SECTION 5.11 ALPHA-PHEBEND 30.00 ROLL MODEL 190 YAW 0

Y-REF (DEG H)	P-REF (PSIA)	U-REF (PSIA)	V-REF (FT/SEC)	PHO-REF (SLUGS/FT ³)	LU-REF (LB-SEC/FT ²)	HE/FT (FT-1)	HREF-TH (H= .0175FT)	SIFR (H= .0175FT)	2Y/B
96.8	0.069	3.004	3857	5.040E-05	7.795E-08	2.943E 06	4.342E-02	2.367E-02	1
GAGE	T _w	QDOT	H(TO)	H(TO)/HREF	H(.910)	H(.510)/HREF	H(TAW)	X/C	
52	510.0	2.013	3.405E-03	.0784	4.052E-03	.0935	3.052E-03	.0910	.2500
53	512.1	2.305	2.797E-03	.0644	3.338E-03	.0769	3.242E-03	.0758	.2500
54	517.0	1.540	1.942E-03	.0447	2.370E-03	.0534	2.286E-03	.0526	.2500
55	523.5	1.158	1.425E-03	.0328	1.705E-03	.0393	1.643E-03	.0388	.2500
56	531.1	2.055	2.553E-03	.0588	3.061E-03	.0705	3.052E-03	.0703	.2500
57	534.9	2.024	3.350E-03	.0771	4.020E-03	.0926	4.021E-03	.0926	.2500
58	535.4	2.821	4.523E-03	.1943	1.023E-02	.2356	9.747E-03	.2245	.2500
59	530.3	4.543	5.637E-03	.1298	6.757E-03	.1556	6.526E-03	.1503	.2500
60	528.6	3.078	3.812E-03	.0878	4.567E-03	.1052	4.434E-03	.1021	.2500
61	530.7	2.624	3.254E-03	.0749	3.900E-03	.0898	3.805E-03	.0876	.2500
62	533.4	2.439	3.039E-03	.0700	3.646E-03	.0840	3.587E-03	.0826	.2500
63	534.5	2.649	3.305E-03	.0761	3.965E-03	.0913	3.928E-03	.0905	.2500
64	532.3	1.959	2.434E-03	.0561	2.924E-03	.0673	2.975E-03	.0685	.2500
65	537.0	4.335	5.424E-03	.1249	6.513E-03	.1500	6.355E-03	.1464	.2500
66	536.4	3.215	4.020E-03	.0926	4.827E-03	.1112	4.699E-03	.1082	.2500
67	536.3	3.076	3.844E-03	.0886	4.617E-03	.1063	4.564E-03	.1051	.2500
68	532.2	2.035	2.532E-03	.0583	3.036E-03	.0699	3.097E-03	.0713	.2500
69	533.8	2.432	4.277E-03	.0985	5.132E-03	.1182	4.998E-03	.1151	.2500
70	530.5	1.781	2.211E-03	.0509	2.500E-03	.0610	2.543E-03	.0595	.2500
71	532.0	1.632	2.024E-03	.0467	2.433E-03	.0560	2.365E-03	.0545	.2500
72	536.1	3.291	4.101E-03	.0945	4.924E-03	.1134	4.829E-03	.1112	.2500
73	532.7	2.166	2.695E-03	.0621	3.233E-03	.0745	3.246E-03	.0748	.2500
74	531.4	1.761	2.188E-03	.0504	2.624E-03	.0604	2.674E-03	.0616	.2500
75	536.0	1.993	1.012E-02	.2330	1.218E-02	.2804	1.183E-02	.2725	.2500
76	537.0	10.379	1.332E-02	.3068	1.500E-02	.3703	1.562E-02	.3598	.2500
77	530.6	4.360	5.473E-03	.1261	6.576E-03	.1515	6.412E-03	.1477	.2500
78	534.4	4.009	5.100E-03	.1175	6.120E-03	.1410	6.060E-03	.1396	.2500
79	532.7	2.079	2.661E-03	.0621	3.233E-03	.0745	3.246E-03	.0748	.2500
80	537.6	4.570	5.723E-03	.1318	6.473E-03	.1583	6.400E-03	.1538	.2500
81	532.7	4.225	1.177E-02	.2712	1.420E-02	.3259	1.384E-02	.3187	.2500
82	539.1	7.717	9.405E-03	.2258	1.181E-02	.2720	1.145E-02	.2636	.2500
83	535.3	3.479	4.344E-03	.1000	5.214E-03	.1201	5.091E-03	.1172	.2500
84	533.0	2.644	7.167E-03	.1651	8.619E-03	.1985	8.757E-03	.2017	.2500

11/12/77

AEDC(IAHO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-21BA

GROUP	CONFTG	FOOFL	MACH NO	PO-PSIA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL MODEL	YAW
5	1		8.00	677.6	1333	30.03	-0.03	30.00	180	-0
Y-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FI-1)	HREF-FR (M= .0175FI) (M= .0175FI)	STFR (M= .0175FI) (M= .0175FI)	SWITCH	POSITION
96.6	.069	3.109	3853	6.028E-05	7.776E-09	2.987E 06	4.349E-02	2.394E-02	1	
GAGE	T _W	Q/OT	H(TO)	H(TO)/HREF	H(.9TC)	HREF H(TAW)	H(TAW)/HREF	X/L	PHI	2Y/8
1	595.1	3.099	4.849E-03	.1124	5.455E-03	.1746	4.208E-03	.0967	.0050	0
2	578.2	15.925	2.110E-02	.4851	2.563E-02	.5892	2.114E-02	.4861	.0120	0
3	542.9	11.103	1.442E-02	.3315	1.744E-02	.4009	1.508E-02	.3468	.0200	0
4	551.1	6.997	8.949E-03	.2057	1.079E-02	.2480	9.749E-03	.2241	.0400	0
5	544.5	5.210	6.607E-03	.1519	7.952E-03	.1828	7.336E-03	.1687	.0600	0
6	539.4	4.215	5.315E-03	.1222	6.388E-03	.1469	5.945E-03	.1376	.0800	0
7	533.9	3.709	4.641E-03	.1067	5.570E-03	.1281	5.270E-03	.1212	.1000	0
8	521.4	2.796	3.445E-03	.0792	4.122E-03	.0948	3.949E-03	.0908	.1500	0
9	521.1	4.707	5.842E-03	.1343	6.999E-03	.1609	6.703E-03	.1541	.1500	0
10	520.5	2.894	3.547E-03	.0820	4.267E-03	.0981	4.088E-03	.0940	.1500	0
11	514.1	2.545	3.120E-03	.0717	3.727E-03	.0857	3.594E-03	.0826	.2000	0
12	516.5	3.242	4.020E-03	.0924	4.805E-03	.1105	4.633E-03	.1065	.2000	0
13	511.1	2.526	3.073E-03	.0707	3.668E-03	.0843	3.534E-03	.0812	.2250	0
14	501.5	2.519	3.030E-03	.0697	3.608E-03	.0830	3.494E-03	.0803	.2500	0
15	499.6	2.377	2.852E-03	.0656	3.395E-03	.0781	3.292E-03	.0757	.2750	0
16	499.1	2.311	2.772E-03	.0637	3.299E-03	.0759	3.199E-03	.0736	.3000	0
17	503.3	3.247	3.914E-03	.0900	4.663E-03	.1072	4.521E-03	.1039	.3000	0
18	504.9	3.447	4.163E-03	.0957	4.962E-03	.1141	4.811E-03	.1106	.3000	0
19	505.6	3.443	4.209E-03	.0944	5.018E-03	.1154	4.865E-03	.1118	.3000	0
20	499.5	2.250	2.699E-03	.0621	3.213E-03	.0739	3.116E-03	.0716	.3250	0
21	499.6	2.214	2.661E-03	.0612	3.170E-03	.0729	3.074E-03	.0707	.3500	0
22	500.2	2.022	2.428E-03	.0558	2.891E-03	.0665	2.803E-03	.0645	.4000	0
23	502.4	2.392	2.841E-03	.0662	3.533E-03	.0789	3.328E-03	.0765	.4000	0
24	502.4	1.948	2.344E-03	.0539	2.795E-03	.0643	2.710E-03	.0623	.4500	0
25	505.2	1.943	2.347E-03	.0540	2.798E-03	.0643	2.712E-03	.0624	.5000	0
26	506.9	1.945	2.355E-03	.0541	2.800E-03	.0646	2.722E-03	.0626	.5000	0
27	508.8	1.991	2.295E-03	.0524	2.737E-03	.0629	2.653E-03	.0610	.5500	0
28	512.6	1.933	2.356E-03	.0542	2.813E-03	.0647	2.726E-03	.0627	.6000	0
29	514.7	1.925	2.353E-03	.0541	2.811E-03	.0646	2.724E-03	.0626	.6000	0
30	516.6	2.005	2.456E-03	.0565	2.936E-03	.0675	2.845E-03	.0654	.6500	0
31	521.3	2.135	2.631E-03	.0605	3.148E-03	.0724	3.049E-03	.0701	.7000	0
32	525.8	2.405	2.940E-03	.0685	3.569E-03	.0821	3.457E-03	.0795	.7500	0
33	531.8	3.150	3.932E-03	.0904	4.716E-03	.1084	4.567E-03	.1050	.8000	0
34	531.7	2.870	3.540E-03	.0814	4.246E-03	.0976	4.111E-03	.0945	.8000	0
35	536.6	3.844	4.843E-03	.1123	5.465E-03	.1248	5.273E-03	.1316	.8500	0
36	537.6	3.946	4.961E-03	.1141	5.560E-03	.1270	5.355E-03	.1346	.9000	0
37	536.8	3.568	4.482E-03	.1030	5.183E-03	.1238	5.089E-03	.1216	.9000	0
38	537.3	3.958	4.975E-03	.1144	5.576E-03	.1274	5.392E-03	.1359	.9500	0
39	537.6	4.340	5.442E-03	.1260	6.546E-03	.1374	6.346E-03	.1505	1.0000	0
40	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
41	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
42	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
43	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
44	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
45	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
46	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
47	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
48	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
49	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0
50	537.6	4.340	5.442E-03	.1260	6.546E-03	.1374	6.346E-03	.1505	1.0000	0
51	539.5	4.543	5.770E-03	.1328	6.943E-03	.1496	6.740E-03	.1587	1.0000	0

11/12/73

AEDC (AMU, IAC, J) ARMOLO AFS, TENNESSEE
VON KAMMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA3E2-210A

GROUP	CONFIG	MODEL	WACH	NO	POSSTA	TOTDFGR	R	ALPHA-MODEFL	ALPHA-SECTOR	ALPHA-PREBEND	HOLL	MODEL	YAW
5	1		8.00	677.6	1333			30.03	-0.03	30.00	180		-0
T-1NF (DEG R)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT3)	MU-1NF (LB-SEC/FT2)	HE/FT (FT-1)	HREF-FR (H= .0175FT)	STFR (H= .0175FT)	SWITCH	POSITION			
96.6	3.069	3.109	3853	6.028E-05	7.776E-08	2.947E 06	4.349E-02	2.354E-02	1				
GAGE	TW	QDOT	H(TO)	H(TO)/HREF	H(-9TO)	H(-5TC)/HREF	H(TAW)	X/C	2Y/B				
52	508.7	3.211	3.895E-03	.0896	4.647E-03	.1068	4.408E-03	.1014	.0420				
53	513.1	2.770	3.374E-03	.0777	4.035E-03	.0924	3.842E-03	.0892	.3020				
54	518.0	2.013	2.470E-03	.0568	2.953E-03	.0679	2.838E-03	.0653	.4470				
55	524.0	1.707	2.112E-03	.0485	2.527E-03	.0581	2.433E-03	.0559	.5910				
56	534.4	1.194	1.388E-03	.0284	1.665E-03	.1073	4.539E-03	.1044	.7360				
57	539.6	4.354	5.488E-03	.1262	6.596E-03	.1516	6.440E-03	.1481	.8910				
58	534.2	6.428	8.048E-03	.1850	9.600E-03	.2221	8.956E-03	.2059	.2500				
59	529.6	4.513	5.618E-03	.1292	6.736E-03	.1549	6.336E-03	.1457	.0500				
60	529.7	3.291	4.093E-03	.0941	4.907E-03	.1128	4.641E-03	.1067	.1000				
61	531.6	2.468	3.704E-03	.0852	4.433E-03	.1021	4.223E-03	.0971	.2000				
62	538.0	2.026	3.400E-03	.0875	4.573E-03	.1051	4.384E-03	.1008	.4000				
63	538.7	3.729	4.695E-03	.1080	5.642E-03	.1297	5.450E-03	.1253	.5600				
64	534.8	3.056	3.824E-03	.0880	4.596E-03	.1057	4.574E-03	.1052	.7000				
65	530.5	4.486	5.624E-03	.1284	6.765E-03	.1555	6.430E-03	.1478	.9000				
66	540.0	3.129	3.945E-03	.0907	4.742E-03	.1090	4.497E-03	.1034	.1740				
67	540.8	3.650	4.604E-03	.1059	5.540E-03	.1274	5.339E-03	.1228	.4840				
68	540.4	2.880	3.609E-03	.0830	4.333E-03	.0996	4.123E-03	.0994	.7000				
69	542.3	4.741	6.034E-03	.1388	7.256E-03	.1468	6.842E-03	.1582	.9000				
70	543.0	4.120	5.211E-03	.1198	6.268E-03	.1441	5.944E-03	.1368	.1000				
71	540.5	3.307	4.184E-03	.0962	5.036E-03	.1158	4.764E-03	.1095	.2000				
72	536.6	2.554	3.224E-03	.0741	3.874E-03	.0891	3.702E-03	.0851	.4300				
73	534.7	2.099	2.636E-03	.0606	3.166E-03	.0724	3.103E-03	.0714	.6000				
74	577.1	15.271	2.020E-02	.4645	3.319E-03	.0763	3.309E-03	.0761	.8000				
75	545.2	3.674	4.664E-03	.1072	5.614E-03	.1291	5.314E-03	.1222	.9000				
76	545.2	3.191	4.051E-03	.0931	4.876E-03	.1121	4.424E-03	.1064	.7500				
77	535.3	1.730	2.145E-03	.0499	2.604E-03	.0599	2.515E-03	.0578	.3000				
78	536.4	2.455	3.094E-03	.0711	3.718E-03	.0855	3.701E-03	.0851	.5000				
79	541.5	10.424	1.351E-02	.3107	1.433E-02	.1756	1.441E-02	.1543	.7500				
80	572.3	12.430	1.644E-02	.3480	2.046E-02	.1700	1.431E-02	.1440	.8500				
81	574.3	13.692	1.805E-02	.4149	2.189E-02	.2534	2.075E-02	.1770	.8500				
83	554.8	7.155	9.194E-03	.2114	1.104E-02	.2651	1.046E-02	.2405	.9500				
84	558.5	8.267	1.047E-02	.2454	1.289E-02	.2964	1.225E-02	.2816	.9500				
85	556.0	8.026	1.033E-02	.2375	1.247E-02	.2867	1.238E-02	.2846	.9500				

11/12/73

AEDICARD, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL #
VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	P-0.051A	TO DEG R	ALPHA-MODFL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
6	1		8.00	676.1	1331	34.96	-4.96	30.00	180		-0
T-1NF	P-1NF	Q-1NF	V-1NF	RHO-1NF	MU-1NF	RE/FT	HREF-FR	SIFR	SWITCH		
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(H-SEC/FT3)	(FT-1)	(R=.0175E1)	(R=.0175E1)	POSITION		
96.4	0.06	3.10	3450	6.024E-05	7.765E-08	2.987E 06	4.343E-02	2.354E-02	1		
GAGE	T	GDOT	H(TO)	H(TO)/HREF	H(.STO)	H(.STO)/HREF	H(TAW)	X/L	PHI	2Y/B	
1	525.4	4.626	5.743E-03	.1322	6.849E-03	.1484	4.792E-03	.1103	.0050	0	
2	577.9	10.442	2.183E-02	.5027	2.652E-02	.6106	2.119E-02	.4880	.0120	0	
3	563.4	11.779	1.535E-02	.1533	1.457E-02	.4274	1.558E-02	.3486	.0200	0	
4	552.2	7.716	9.910E-03	.2282	1.195E-02	.2752	1.049E-02	.2415	.0500	0	
5	545.8	5.958	7.584E-03	.1747	9.137E-03	.2104	8.195E-03	.1887	.0600	0	
6	541.2	4.941	6.257E-03	.1440	7.525E-03	.1732	6.860E-03	.1579	.0800	0	
7	534.7	4.311	5.415E-03	.1247	6.502E-03	.1497	5.990E-03	.1379	.1000	0	
8	527.6	3.413	4.217E-03	.0971	5.047E-03	.1162	4.714E-03	.1085	.1500	0	
9	527.6	5.386	6.764E-03	.1544	8.036E-03	.1850	7.500E-03	.1727	.1500	30.0000	
10	519.6	3.027	3.730E-03	.0859	4.462E-03	.1027	4.168E-03	.0960	.1500	45.5000	
11	513.5	3.314	4.055E-03	.0934	4.843E-03	.1115	4.566E-03	.1049	.2000	0	
12	516.4	3.976	4.881E-03	.1124	5.881E-03	.1343	5.487E-03	.1263	.2000	0	
13	509.6	3.201	3.897E-03	.0897	4.651E-03	.1071	4.371E-03	.1006	.2250	0	
14	495.9	3.141	3.822E-03	.0880	4.547E-03	.1047	4.300E-03	.0990	.2500	0	
15	494.7	3.033	3.627E-03	.0835	4.313E-03	.0993	4.085E-03	.0940	.2750	0	
16	494.2	2.884	3.447E-03	.0794	4.099E-03	.0944	3.891E-03	.0894	.3000	0	
17	498.4	3.799	4.566E-03	.1051	5.435E-03	.1251	5.145E-03	.1185	.3000	34.0000	
18	570.9	4.099	4.934E-03	.1137	5.881E-03	.1354	5.567E-03	.1282	.3000	40.0000	
19	520.0	4.100	4.947E-03	.1136	5.893E-03	.1357	5.577E-03	.1284	.3000	45.0000	
20	495.2	2.752	3.293E-03	.0758	3.917E-03	.0902	3.709E-03	.0854	.3250	0	
21	495.9	2.763	3.309E-03	.0762	3.936E-03	.0906	3.727E-03	.0858	.3500	0	
22	497.7	2.640	3.168E-03	.0729	3.770E-03	.0868	3.569E-03	.0822	.4000	0	
23	500.0	2.818	3.392E-03	.0781	4.039E-03	.0930	3.823E-03	.0880	.4000	0	
24	500.5	2.607	3.140E-03	.0723	3.739E-03	.0861	3.539E-03	.0815	.4500	0	
25	503.0	2.566	3.099E-03	.0714	3.693E-03	.0850	3.495E-03	.0805	.5000	0	
26	504.3	2.411	2.917E-03	.0672	3.477E-03	.0800	3.290E-03	.0757	.5000	0	
27	507.2	2.537	3.079E-03	.0709	3.673E-03	.0846	3.475E-03	.0800	.5500	0	
28	511.5	2.645	3.277E-03	.0754	3.912E-03	.0901	3.700E-03	.0852	.6000	0	
29	513.3	2.630	3.214E-03	.0740	3.842E-03	.0884	3.633E-03	.0836	.6000	0	
30	516.4	2.969	3.646E-03	.0839	4.358E-03	.1003	4.120E-03	.0948	.6500	0	
31	522.7	3.561	4.406E-03	.1014	5.274E-03	.1214	4.984E-03	.1147	.7000	0	
32	528.3	4.002	4.986E-03	.1148	5.977E-03	.1376	5.645E-03	.1300	.7500	0	
33	530.3	5.291	6.658E-03	.1533	7.998E-03	.1841	7.548E-03	.1738	.8000	0	
34	537.1	5.302	6.740E-03	.1561	8.144E-03	.1875	7.648E-03	.1770	.8000	0	
35	542.7	6.205	7.987E-03	.1839	9.610E-03	.2212	9.142E-03	.2105	.8500	0	
36	542.8	5.433	7.527E-03	.1733	9.057E-03	.2085	8.649E-03	.1998	.9000	0	
37	542.3	5.849	7.417E-03	.1706	8.915E-03	.2054	8.550E-03	.1969	.9000	0	
38	542.4	5.840	7.410E-03	.1706	8.915E-03	.2053	8.550E-03	.1969	.9000	0	
39	542.4	6.201	7.864E-03	.1811	9.461E-03	.2174	9.181E-03	.2114	1.0000	0	
40	542.4	6.180	7.842E-03	.1805	9.435E-03	.2172	9.157E-03	.2108	1.0000	0	

11/12/73

AEDC(ARO, INC.), ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 VA352-21HA

GROUP CONFIG MODEL MACH NO POS/STA 10 DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREHEND ROLL MODEL YAW
 6 1 8.00 076.1 1331 34.96 -4.96 30.00 180 -0

Y-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	WE/FT (FT-1)	HREF-FH (H= .0175FI) (R= .0175FI) POSITION	STFR	2Y/B
96.4	0.69	3.102	3850	6.024E-05	7.745E-08	2.9RTF 06	4.343E-02	2.354E-02	1
GAGE	TW	GDOT	H(TO)	H(TO)/HREF	H(19TO)	H(19TO)/HREF	H(TAW)	X/C	
52	54.8	3.479	4.211E-03	.0970	5.020E-03	.1156	4.644E-03	.1069	.0420
53	58.6	3.193	3.883E-03	.0894	4.633E-03	.1067	4.349E-03	.1001	.0302
54	514.4	2.518	3.084E-03	.0711	3.687E-03	.0849	3.457E-03	.0796	.0470
55	524.1	2.990	3.706E-03	.0853	4.438E-03	.1022	4.165E-03	.0959	.0510
56	518.5	2.990	7.054E-03	.1624	8.478E-03	.1552	8.042E-03	.1852	.0730
57	543.5	6.407	8.137E-03	.1873	9.792E-03	.2255	9.322E-03	.2146	.0810
58	528.8	6.174	7.696E-03	.1772	9.227E-03	.2124	8.330E-03	.1918	.0500
59	525.2	4.656	5.779E-03	.1331	6.923E-03	.1594	6.343E-03	.1460	.1000
60	525.5	3.662	4.547E-03	.1047	5.447E-03	.1254	5.020E-03	.1156	.2000
61	528.0	3.555	4.428E-03	.1019	5.308E-03	.1222	4.914E-03	.1132	.3000
62	517.5	4.714	5.942E-03	.1368	7.139E-03	.1644	6.671E-03	.1536	.5600
63	539.0	5.399	6.819E-03	.1570	8.196E-03	.1847	7.717E-03	.1777	.7000
64	536.2	4.657	5.860E-03	.1349	7.039E-03	.1621	6.842E-03	.1575	.9000
65	533.7	4.778	5.993E-03	.1380	7.195E-03	.1656	6.664E-03	.1534	.1760
66	536.1	4.028	5.068E-03	.1167	6.047E-03	.1401	5.623E-03	.1295	.4840
67	537.5	4.505	5.678E-03	.1307	6.822E-03	.1571	6.409E-03	.1476	.7000
68	533.4	4.036	5.060E-03	.1165	6.074E-03	.1398	5.921E-03	.1363	.9000
69	517.8	6.028	7.500E-03	.1750	9.133E-03	.2103	8.437E-03	.1942	.1000
70	539.7	5.071	6.394E-03	.1472	7.683E-03	.1769	7.103E-03	.1635	.2000
71	534.8	4.889	6.179E-03	.1423	7.429E-03	.1710	6.844E-03	.1576	.3000
72	532.6	3.570	4.485E-03	.1033	5.385E-03	.1240	5.016E-03	.1155	.6000
73	531.4	3.148	3.968E-03	.0914	4.762E-03	.1096	4.556E-03	.1049	.8000
74	548.5	6.516	1.088E-02	.2506	1.312E-02	.3020	1.208E-02	.1075	.9000
75	537.2	4.008	5.050E-03	.1163	6.068E-03	.1397	5.596E-03	.1288	.7500
76	537.7	3.722	4.892E-03	.1080	5.638E-03	.1298	5.215E-03	.1201	.7500
77	526.4	3.074	2.586E-03	.0595	3.099E-03	.0713	2.919E-03	.0672	.7500
78	531.6	3.041	3.904E-03	.0876	4.564E-03	.1051	4.439E-03	.1022	.7500
79	576.5	17.691	2.345E-02	.5399	2.847E-02	.6555	2.608E-02	.6004	.1000
80	557.5	10.651	1.377E-02	.3170	1.663E-02	.3829	1.529E-02	.3521	.3000
81	540.4	4.569	5.780E-03	.1331	6.950E-03	.1600	6.431E-03	.1481	.5000
83	558.1	10.477	1.420E-02	.3270	1.716E-02	.3951	1.574E-02	.3623	.1000
84	552.1	11.457	1.595E-02	.3418	1.794E-02	.4130	1.658E-02	.3817	.9500
85	549.3	8.172	1.045E-02	.2407	1.260E-02	.2901	1.221E-02	.2812	.9000

11/12/73

AFUCIARNO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
VA352-218A

GROUP	CORP	MODEL	WACH	NU	PP	STA	TO	DEG	R	ALPHA	MODEL	ALPHA	SECTOR	ALPHA	PREFBEND	ROLL	MODEL	YAW
7	1		8.00			546.2	1320			24.97	5.03	30.00	180	0				0
T-1NF	P-1NF	Q-1NF	V-1NF	RHO-1NF	MU-1NF	RE/FT	HREF-FR	STFR	SWITCH									
(DEG)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT ³)	(LB-SEC/FT ²)	(FT-1)	(H= .0175FT)	(H= .0175FT)	POSITION									
95.6	.056	2.504	3434	4.908E-05	7.700E-06	2.443E 06	3.498E-02	2.604E-02	1									
GAGE	T4	COOT	H(T0)	H(T0)/HREF	H(1.910)	H(1.910)/HREF	H(TAW)	X/L	PHI									
1	5.9.2	4.951	3.644E-03	.0934	4.348E-03	.1115	3.238E-03	.0431	0									
2	5.8.5	13.327	1.728E-02	.4432	2.044E-02	.5347	1.744E-02	.4581	0									
3	5.8.3	5.012	1.147E-02	.2943	1.374E-02	.3438	1.234E-02	.3167	0									
4	5.8.4	5.430	6.422E-03	.1750	8.178E-03	.2098	7.621E-03	.1955	0									
5	5.8.5	3.903	4.871E-03	.1249	5.831E-03	.1496	5.538E-03	.1421	0									
6	5.8.5	3.156	3.923E-03	.1006	4.693E-03	.1204	4.520E-03	.1160	0									
7	5.8.5	2.637	3.263E-03	.0837	3.901E-03	.1001	3.790E-03	.0972	0									
8	5.8.9	1.818	2.231E-03	.0572	2.652E-03	.0683	2.615E-03	.0671	0									
9	5.8.6	3.014	4.472E-03	.1147	5.344E-03	.1371	5.248E-03	.1346	0									
10	5.8.7	2.499	2.466E-03	.0761	3.542E-03	.0909	3.479E-03	.0892	0									
11	5.8.9	1.657	2.023E-03	.0514	2.412E-03	.0619	2.383E-03	.0611	0									
12	5.8.9	2.431	2.943E-03	.0765	3.560E-03	.0913	3.516E-03	.0902	0									
13	5.8.8	1.576	1.920E-03	.0493	2.248E-03	.0587	2.258E-03	.0579	0									
14	5.8.6	1.532	1.847E-03	.0474	2.197E-03	.0564	2.178E-03	.0559	0									
15	5.8.1	1.455	1.753E-03	.0450	2.085E-03	.0535	2.064E-03	.0531	0									
16	5.8.4	2.327	2.815E-03	.0722	3.515E-03	.0820	3.475E-03	.0816	0									
17	5.8.4	2.574	3.124E-03	.0800	3.714E-03	.0953	3.686E-03	.0946	0									
18	5.8.3	2.747	3.360E-03	.0868	4.002E-03	.1026	3.971E-03	.1019	0									
19	5.8.9	1.395	1.671E-03	.0429	1.947E-03	.0510	1.972E-03	.0506	0									
20	5.8.1	1.379	1.665E-03	.0427	1.940E-03	.0508	1.966E-03	.0504	0									
21	5.8.9	1.235	1.494E-03	.0383	1.777E-03	.0456	1.764E-03	.0452	0									
22	5.8.1	1.572	1.906E-03	.0484	2.270E-03	.0582	2.252E-03	.0578	0									
23	5.8.4	1.186	1.439E-03	.0369	1.713E-03	.0440	1.700E-03	.0436	0									
24	5.8.4	1.247	1.469E-03	.0377	1.749E-03	.0449	1.738E-03	.0445	0									
25	5.8.1	1.253	1.526E-03	.0391	1.819E-03	.0467	1.805E-03	.0463	0									
26	5.8.6	1.119	1.367E-03	.0351	1.630E-03	.0418	1.618E-03	.0415	0									
27	5.8.4	1.054	1.295E-03	.0332	1.545E-03	.0396	1.533E-03	.0393	0									
28	5.8.7	1.126	1.385E-03	.0355	1.641E-03	.0424	1.641E-03	.0421	0									
29	5.8.4	.994	1.226E-03	.0315	1.445E-03	.0376	1.454E-03	.0373	0									
30	5.8.7	.905	1.124E-03	.0288	1.342E-03	.0344	1.332E-03	.0342	0									
31	5.8.5	.833	1.039E-03	.0266	1.243E-03	.0319	1.233E-03	.0316	0									
32	5.8.8	.748	9.604E-04	.0240	1.151E-03	.0295	1.142E-03	.0293	0									
33	5.8.2	.745	9.831E-04	.0240	1.174E-03	.0295	1.164E-03	.0293	0									
34	5.8.5	.709	9.901E-04	.0228	1.067E-03	.0274	1.064E-03	.0274	0									
35	5.8.1	.647	8.386E-04	.0215	1.005E-03	.0258	1.011E-03	.0259	0									
36	5.8.1	.752	9.448E-04	.0242	1.133E-03	.0291	1.139E-03	.0292	0									
37	5.8.4	.603	7.546E-04	.0195	9.045E-04	.0233	9.204E-04	.0236	0									
38	5.8.1	.740	9.549E-04	.0245	1.145E-03	.0294	1.163E-03	.0298	0									
39	5.8.9	1.329	1.674E-03	.0429	2.004E-03	.0515	2.041E-03	.0523	0									

11/12/73

AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21BA

GROUP CONFIG MODEL MACH NO POS PSTA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW
7 1 8.00 546.2 1320 24.97 5.03 30.00 180 0

Y-REF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (EI-1)	MREF-FR (ME .0175EI)	STFR (H .0175EI)	SWITCH POSITION
95.6	.056	2.504	344	4.908E-05	7.700E-08	2.443F 06	3.898E-02	2.606E-02	1
GAGE	TM	COUT	H(TO)	H(TO)/HREF	H(.9TC)	H(.9TC)/HREF	M(TAW)	X/C	2Y/B
52	499.5	2.454	2.992E-03	.0768	3.566E-03	.0515	3.469E-03	.0890	.0920
53	512.3	2.017	2.488E-03	.0639	2.943E-03	.0755	2.900E-03	.0744	.3020
54	517.8	1.355	1.604E-03	.0428	1.992E-03	.0511	1.962E-03	.0503	.4470
55	514.4	.901	1.118E-03	.0287	1.337E-03	.0343	1.319E-03	.0338	.5910
56	521.9	1.135	1.423E-03	.0365	1.705E-03	.0437	1.599E-03	.0436	.7360
57	525.2	1.349	1.697E-03	.0435	2.036E-03	.0522	2.035E-03	.0522	.8410
58	524.7	1.028	1.581E-03	.0345	1.909E-03	.0432	1.860E-03	.0432	.8410
59	519.0	3.794	4.737E-03	.1215	5.672E-03	.1455	5.477E-03	.1405	.4000
60	518.3	2.667	3.377E-03	.0853	3.983E-03	.1022	3.866E-03	.0992	.4000
61	519.6	2.252	2.815E-03	.0722	3.371E-03	.0865	3.287E-03	.0843	.4000
62	523.6	1.772	2.255E-03	.0571	2.668E-03	.0684	2.624E-03	.0673	.4000
63	524.3	1.741	2.189E-03	.0562	2.624E-03	.0673	2.599E-03	.0667	.4000
64	522.6	1.078	1.352E-03	.0347	1.620E-03	.0415	1.644E-03	.0423	.4000
65	526.1	3.826	4.820E-03	.1236	5.781E-03	.1483	5.639E-03	.1447	.4000
66	525.7	2.560	3.224E-03	.0927	3.867E-03	.0992	3.764E-03	.0966	.5000
67	526.0	2.392	3.013E-03	.0773	3.614E-03	.0927	3.571E-03	.0916	.5000
68	522.5	1.472	1.847E-03	.0474	2.213E-03	.0568	2.254E-03	.0579	.5000
69	520.5	1.002	1.766E-03	.0366	1.913E-03	.0458	1.944E-03	.0467	.5000
70	522.2	1.282	1.900E-03	.0487	2.276E-03	.0584	2.219E-03	.0569	.6000
71	522.9	1.611	2.007E-03	.0612	1.926E-03	.0694	1.871E-03	.0680	.6000
72	521.7	1.237	1.922E-03	.0519	2.423E-03	.0522	2.376E-03	.0510	.6000
73	521.3	1.049	1.558E-03	.0394	1.857E-03	.0476	1.864E-03	.0478	.6000
74	533.8	6.484	8.249E-03	.0350	1.634E-03	.0419	1.664E-03	.0427	.6000
75	541.1	7.748	8.950E-03	.2116	9.914E-03	.2543	9.632E-03	.2471	.6000
76	527.7	3.018	3.810E-03	.2553	1.194E-02	.3073	1.164E-02	.2986	.7500
77	520.3	1.568	1.941E-03	.0977	4.572E-03	.1173	4.457E-03	.1143	.7500
78	527.2	3.441	4.341E-03	.0503	2.349E-03	.0603	2.325E-03	.0596	.7500
79	539.5	7.826	1.003E-02	.1113	5.204E-03	.1336	5.294E-03	.1359	.7500
80	526.9	3.365	4.244E-03	.2573	1.207E-02	.3086	1.171E-02	.3003	.8500
81	541.0	7.632	9.800E-03	.1089	5.091E-03	.1706	4.947E-03	.1259	.8500
83	518.9	6.690	8.567E-03	.2514	1.180E-02	.3027	1.150E-02	.2950	.8500
84	527.0	3.093	3.784E-03	.2198	1.031E-02	.2644	9.989E-03	.2562	.9500
85	512.6	4.424	5.620E-03	.0972	4.545E-03	.1166	4.437E-03	.1138	.9500
				.1442	6.752E-03	.1732	6.857E-03	.1759	.9500

11/12/73

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-218A

GROUP CONFIG MODEL WACH NO POPSSTA TODEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW
8 1 1 7.98 544.3 1310 29.98 .02 30.00 180 0

T-1AF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (UH-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (HREF-0175FI)	SIFR (HREF-0175FI)	SWITCH (HREF-0175FI) POSITION
95.4	.057	2.524	3818	4.985E-05	7.677E-08	2.480E 06	3.908E-02	2.594E-02	1
GAGE	TW	COOT	HITO	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C	2Y/B
52	512.1	2.810	3.478E-03	.0890	4.152E-03	.1062	3.939E-03	.1008	.2500
53	516.8	2.345	2.920E-03	.0747	3.489E-03	.0893	3.357E-03	.0859	.2500
54	511.9	1.629	2.041E-03	.0522	2.442E-03	.0625	2.347E-03	.0601	.2500
55	518.1	1.186	1.494E-03	.0383	1.795E-03	.0459	1.728E-03	.0442	.2500
56	525.8	1.747	2.253E-03	.0577	2.705E-03	.0692	2.633E-03	.0674	.2500
57	528.6	2.348	3.005E-03	.0769	3.611E-03	.0924	3.527E-03	.0902	.2500
58	526.5	2.640	7.201E-03	.1842	8.046E-03	.2212	8.017E-03	.2051	.2500
59	521.9	2.694	4.688E-03	.1200	5.623E-03	.1439	5.290E-03	.1354	.4000
60	522.7	2.795	3.551E-03	.0909	4.260E-03	.1090	4.029E-03	.1031	.4000
61	525.7	2.488	3.173E-03	.0812	3.810E-03	.0975	3.621E-03	.0927	.4000
62	530.1	2.124	2.724E-03	.0697	3.274E-03	.0838	3.141E-03	.0804	.4000
63	520.6	2.461	3.155E-03	.0807	3.791E-03	.0970	3.663E-03	.0937	.4000
64	525.7	1.815	2.315E-03	.0592	2.779E-03	.0711	2.767E-03	.0708	.4000
65	523.1	2.802	4.895E-03	.1252	5.887E-03	.1506	5.594E-03	.1432	.5000
66	533.2	2.487	3.202E-03	.0819	3.851E-03	.0985	3.652E-03	.0934	.5000
67	531.7	2.601	3.342E-03	.0855	4.019E-03	.1028	3.874E-03	.0991	.5000
68	526.5	1.990	2.541E-03	.0650	3.051E-03	.0781	3.045E-03	.0779	.5000
69	533.6	2.070	5.114E-03	.1308	6.152E-03	.1574	5.835E-03	.1493	.6000
70	526.4	2.454	4.465E-03	.1143	5.376E-03	.1375	5.102E-03	.1305	.6000
71	524.4	2.696	3.466E-03	.0892	4.197E-03	.1074	3.970E-03	.1016	.6000
72	528.3	1.774	2.282E-03	.0594	2.745E-03	.0702	2.624E-03	.0671	.6000
73	527.1	1.459	1.888E-03	.0478	2.244E-03	.0574	2.200E-03	.0563	.6000
74	561.0	1.526	1.958E-03	.0499	2.342E-03	.0599	2.335E-03	.0597	.6000
75	519.5	1.868	1.451E-02	.3713	1.759E-02	.4500	1.661E-02	.4251	.7500
76	539.0	2.032	3.936E-03	.1007	4.742E-03	.1213	4.489E-03	.1149	.7500
77	529.6	2.629	3.411E-03	.0873	4.109E-03	.1051	3.901E-03	.0998	.7500
78	528.4	1.292	1.655E-03	.0424	1.049E-03	.0509	1.021E-03	.0492	.7500
79	532.7	1.785	2.295E-03	.0588	2.762E-03	.0707	2.749E-03	.0703	.7500
80	522.2	1.427	1.144E-02	.2851	1.348E-02	.3449	1.272E-02	.3254	.8500
81	563.4	10.353	1.385E-02	.3543	1.679E-02	.4296	1.585E-02	.4056	.8500
82	549.1	11.026	1.477E-02	.3779	1.791E-02	.4584	1.698E-02	.4345	.8500
83	549.1	5.973	7.852E-03	.2009	9.485E-03	.2427	8.841E-03	.2288	.9500
84	551.0	5.726	8.403E-03	.2268	1.071E-02	.2741	1.018E-02	.2604	.9500
85	548.4	6.434	8.449E-03	.2162	1.020E-02	.2611	1.013E-02	.2593	.9500

AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A
VA352-21BA

GROUP	CONFID	MODEL	MACH NO	POTPSIA	TOIDEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
9	1		7.98	544.7	1315	34.99	-4.99	30.00	180		-0
T-TAF (DEG R)	P-INTF (PSIA)	Q-INTF (PSIA)	V-INTF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FI2)	HE/FT (FI-1)	MHEF-FR (M- .0175FI)	SIFR (M- .0175FI)	SWITCH		
95.7	.057	2.528	3826	4.970E-05	7.706E-08	2.467E 06	3.912E-02	2.589E-02	1		
GAGE	TA	COOT	HITO)	H(TO)	HREF	H(.970)	H(.5TC)/HREF	H(TAW)	HREF		
1	511.9	4.055	5.051E-03	.1291	6.041E-03	.1544	4.221E-03	.1079	X/L	PHI	2Y/B
4	509.8	14.664	1.317E-02	.4900	2.315E-02	.5917	1.862E-02	.4760	.0050		0
2	516.8	10.513	1.354E-02	.3461	1.629E-02	.4165	1.374E-02	.3511	.0200		0
3	527.7	6.939	8.816E-03	.2253	1.058E-02	.2705	9.319E-03	.2382	.0400		0
6	522.7	5.330	6.130E-03	.1720	8.069E-03	.2063	7.255E-03	.1854	.0600		0
7	519.5	4.405	5.540E-03	.1416	6.637E-03	.1691	6.062E-03	.1549	.0800		0
8	515.4	3.792	4.743E-03	.1212	5.677E-03	.1451	5.237E-03	.1339	.1000		0
10	517.4	2.967	3.675E-03	.0939	4.390E-03	.1122	4.102E-03	.1049	.1500		0
12	514.4	4.693	5.864E-03	.1499	7.017E-03	.1794	6.552E-03	.1675	.30.0000		0
13	507.9	2.604	3.227E-03	.0825	3.855E-03	.0985	3.602E-03	.0921	.45.5000		0
16	503.3	2.876	3.544E-03	.0906	4.230E-03	.1091	3.940E-03	.1017	.2000		0
17	5.6.9	3.448	4.267E-03	.1091	5.097E-03	.1303	4.794E-03	.1225	.2000		0
19	5.1.1	2.708	3.426E-03	.0876	4.087E-03	.1045	3.841E-03	.0982	.2250		0
20	493.3	2.711	3.300E-03	.0844	3.929E-03	.1004	3.714E-03	.0949	.2500		0
22	482.6	2.563	3.117E-03	.0797	3.711E-03	.0949	3.612E-03	.0898	.2750		0
23	482.6	2.460	2.992E-03	.0765	3.561E-03	.0910	3.370E-03	.0862	.3000		0
24	486.7	3.263	3.989E-03	.1020	4.758E-03	.1215	4.497E-03	.1149	.3000		0
25	498.4	3.519	4.311E-03	.1102	5.138E-03	.1313	4.861E-03	.1243	.3000		0
26	499.5	3.547	4.351E-03	.1112	5.198E-03	.1326	4.907E-03	.1254	.3000		0
29	493.2	2.424	2.951E-03	.0754	3.513E-03	.0998	3.325E-03	.0850	.3250		0
30	483.7	2.422	2.943E-03	.0754	3.512E-03	.0998	3.324E-03	.0850	.3500		0
31	495.3	2.259	2.757E-03	.0705	3.284E-03	.0939	3.108E-03	.0794	.4000		0
32	498.3	2.433	2.980E-03	.0762	3.552E-03	.0908	3.361E-03	.0859	.4000		0
33	498.5	2.210	2.708E-03	.0692	3.228E-03	.0825	3.054E-03	.0781	.4500		0
34	511.2	2.177	2.614E-03	.0668	3.118E-03	.0797	2.949E-03	.0754	.5000		0
35	503.0	1.961	2.416E-03	.0618	2.893E-03	.0737	2.727E-03	.0697	.5000		0
37	505.1	2.008	2.481E-03	.0634	2.962E-03	.0757	2.800E-03	.0716	.5500		0
38	509.3	2.025	2.515E-03	.0643	3.005E-03	.0768	2.841E-03	.0726	.6000		0
39	511.5	1.973	2.457E-03	.0628	2.937E-03	.0751	2.774E-03	.0710	.6000		0
40	513.7	2.059	2.574E-03	.0657	3.075E-03	.0786	2.905E-03	.0743	.6500		0
41	518.5	2.154	2.705E-03	.0691	3.240E-03	.0828	3.060E-03	.0782	.7000		0
43	522.6	2.303	2.907E-03	.0743	3.486E-03	.0891	3.291E-03	.0841	.7500		0
44	527.8	2.416	3.579E-03	.0915	4.946E-03	.1098	4.055E-03	.1036	.8000		0
45	528.6	2.674	3.401E-03	.0949	4.044E-03	.1044	3.854E-03	.0985	.8000		0
46	532.2	3.234	4.132E-03	.1056	4.967E-03	.1270	4.726E-03	.1208	.8500		0
47	533.1	3.358	4.294E-03	.1098	5.165E-03	.1320	4.950E-03	.1265	.9000		0
48	533.1	3.300	4.221E-03	.1079	5.075E-03	.1297	4.863E-03	.1243	.9000		0
49	533.9	3.479	4.455E-03	.1139	5.357E-03	.1369	5.173E-03	.1243	.9000		0
50	534.2	3.972	5.089E-03	.1301	6.120E-03	.1564	5.494E-03	.1518	.9500		0
51	535.4	4.082	5.367E-03	.1372	6.456E-03	.1650	6.265E-03	.1601	1.0000		0
52									1.0000		-2140

11/12/73

AEDCIAR, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP 9 CONFIG MODEL MACH NO 7.98 544.7 1315 ALPHA-MODCL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW
 34.99 -4.99 30.00 180 -0

Y-REF (DEG R)	P-REF (PSIA)	Q-REF (PSIA)	V-REF (FT/SEC)	RHO-REF (SLUGS/FT ³)	MU-REF (LH-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H= .0175EI)	STFR (H= .0175EI)	SWITCH POSITION
95.7	.057	2.528	3.26	4.970E-05	7.706E-08	2.467E 06	3.912E-02	2.584E-02	1
GAGE	TW	QDOT	HIT0	HIT0/HREF	H1-ST0	H1-ST0/HREF	H1-TAW	X/C	2Y/B
52	53.4	3.092	3.798E-03	.0971	4.533E-03	.1159	4.191E-03	.0820	.2500
53	508.0	2.772	3.436E-03	.0878	4.105E-03	.1049	3.451E-03	.0984	.2500
54	514.1	1.955	2.442E-03	.0624	2.922E-03	.0747	2.737E-03	.0700	.2500
55	522.0	1.727	2.179E-03	.0557	2.612E-03	.0668	2.450E-03	.0626	.2500
56	531.4	2.916	3.722E-03	.0951	4.472E-03	.1143	4.242E-03	.1084	.2500
57	535.0	3.811	4.888E-03	.1249	5.879E-03	.1503	5.596E-03	.1431	.2500
58	527.8	5.483	6.917E-03	.1768	8.305E-03	.2123	7.690E-03	.1914	.2500
59	524.7	3.960	5.013E-03	.1281	6.013E-03	.1537	5.505E-03	.1407	.4000
60	526.2	3.015	3.824E-03	.0977	4.589E-03	.1173	4.225E-03	.1080	.4000
61	529.3	2.706	3.445E-03	.0881	4.138E-03	.1058	3.829E-03	.0979	.4000
62	535.1	2.757	3.536E-03	.0904	4.253E-03	.1087	3.972E-03	.1015	.4000
63	534.9	3.119	3.994E-03	.1022	4.810E-03	.1230	4.527E-03	.1157	.4000
64	531.1	2.546	3.248E-03	.0830	3.903E-03	.0998	3.793E-03	.0969	.4000
65	536.0	3.883	4.986E-03	.1274	5.998E-03	.1533	5.549E-03	.1418	.5000
66	538.0	2.796	3.600E-03	.0920	4.334E-03	.1108	3.999E-03	.1022	.5000
67	536.0	2.781	3.571E-03	.0913	4.297E-03	.1098	4.034E-03	.1031	.5000
68	531.5	2.470	3.153E-03	.0806	3.789E-03	.0969	3.693E-03	.0944	.5000
69	540.4	5.058	6.532E-03	.1670	7.888E-03	.2011	7.259E-03	.1855	.6000
70	542.1	4.157	5.380E-03	.1375	6.433E-03	.1657	5.985E-03	.1530	.6000
71	548.0	3.716	4.821E-03	.1232	5.813E-03	.1486	5.347E-03	.1367	.6000
72	538.5	2.594	3.342E-03	.0854	4.023E-03	.1028	3.742E-03	.0957	.6000
73	538.5	2.090	2.679E-03	.0685	3.222E-03	.0823	3.080E-03	.0787	.6000
74	533.1	2.060	2.636E-03	.0674	3.169E-03	.0810	3.084E-03	.0788	.6000
75	541.9	7.081	9.282E-03	.2373	1.122E-02	.2867	1.031E-02	.2636	.7500
76	544.7	3.183	4.133E-03	.1057	4.984E-03	.1274	4.589E-03	.1173	.7500
77	548.5	2.800	3.752E-03	.0959	4.524E-03	.1156	4.177E-03	.1068	.7500
78	538.2	1.588	2.035E-03	.0520	2.447E-03	.0626	2.302E-03	.0588	.7500
79	536.9	2.290	2.945E-03	.0753	3.544E-03	.0906	3.444E-03	.0880	.7500
80	578.7	12.915	1.883E-02	.4813	2.290E-02	.5855	2.096E-02	.5357	.8500
81	547.7	3.626	4.727E-03	.2683	1.271E-02	.3249	1.167E-02	.2984	.8500
82	547.7	3.626	4.727E-03	.2683	1.271E-02	.3249	1.167E-02	.2984	.8500
83	543.2	5.976	1.184E-02	.3053	1.447E-02	.3700	1.325E-02	.3387	.8500
84	553.2	5.231	1.228E-02	.3139	1.489E-02	.3805	1.374E-02	.3512	.8500
85	553.0	6.112	8.022E-03	.2051	9.696E-03	.2478	9.391E-03	.2401	.9500

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21BA

GROUP CONFIG MODEL MACH NO PO+PSTA TO+DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW
10 1 7.97 +23.7 1320 24.89 5.11 30.00 180 0

T-INF P-INF Q-INF V-INF RHO-INF MU-INF HE/FT HREF-FR STFR SWITCH
(DEG R) (PSIA) (F/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R=.0175FT) (R=.0175FT) POSITION
96.3 .044 1.978 3473 3.874E-05 7.755E-08 1.915F 06 3.463E-02 2.933E-02 1

GAGE	T _W	CNOT	H(TO)	HREF	H(.910)	H(.910)/HREF	H(TAW)	HREF	X/L	PMI	2Y/R
1	515.8	3.677	3.328E-03	.0961	3.982E-03	.1150	2.960E-03	.0855	.0050	0	0
4	52.1	13.258	1.749E-02	.5051	2.118E-02	.6117	1.910E-02	.5227	.0120	0	0
2	545.4	5.111	1.176E-02	.3397	1.418E-02	.4094	1.268E-02	.3660	.0200	0	0
3	531.7	5.302	6.726E-03	.1342	8.079E-03	.2333	7.527E-03	.2174	.0400	0	0
6	525.3	3.685	4.637E-03	.1334	5.461E-03	.1606	5.281E-03	.1525	.0600	0	0
7	521.2	2.927	3.667E-03	.1059	4.394E-03	.1269	4.232E-03	.1222	.0800	0	0
8	518.6	2.477	3.090E-03	.0892	3.700E-03	.1068	3.595E-03	.1038	.1000	0	0
10	511.8	1.703	2.107E-03	.0509	2.514E-03	.0727	2.474E-03	.0715	.1500	0	0
12	518.3	3.343	4.170E-03	.1204	4.992E-03	.1442	4.904E-03	.1416	.1500	30.0000	0
13	513.8	2.409	2.948E-03	.0863	3.572E-03	.1032	3.509E-03	.1013	.1500	45.5000	0
16	518.1	1.550	1.910E-03	.0551	2.280E-03	.0659	2.253E-03	.0651	.2000	0	0
17	511.0	2.221	2.746E-03	.0793	3.281E-03	.0949	3.242E-03	.0936	.2000	0	0
19	516.4	1.463	1.798E-03	.0519	2.146E-03	.0620	2.119E-03	.0612	.2250	0	0
20	510.8	1.434	1.750E-03	.0505	2.066E-03	.0502	2.069E-03	.0597	.2500	0	0
22	499.9	1.393	1.699E-03	.0491	2.025E-03	.0585	2.010E-03	.0580	.2750	0	0
23	499.5	1.363	1.661E-03	.0480	1.974E-03	.0572	1.965E-03	.0567	.3000	0	0
24	513.4	2.144	2.625E-03	.0758	3.131E-03	.0904	3.108E-03	.0898	.3000	34.0000	0
25	514.8	2.416	2.963E-03	.0956	3.536E-03	.1021	3.510E-03	.1014	.3000	40.0000	0
26	515.6	2.575	3.162E-03	.0913	3.774E-03	.1090	3.746E-03	.1082	.3000	45.0000	0
29	499.4	1.284	1.565E-03	.0452	1.866E-03	.0532	1.852E-03	.0535	.3250	0	0
30	510.1	1.263	1.541E-03	.0445	1.836E-03	.0530	1.823E-03	.0526	.3500	0	0
31	510.7	1.176	1.435E-03	.0414	1.711E-03	.0494	1.698E-03	.0490	.4000	0	0
32	512.6	1.436	1.754E-03	.0507	2.095E-03	.0605	2.079E-03	.0600	.4000	0	0
33	512.6	1.100	1.345E-03	.0389	1.604E-03	.0463	1.593E-03	.0460	.4500	0	0
34	514.5	1.150	1.411E-03	.0407	1.683E-03	.0486	1.671E-03	.0483	.5000	0	0
35	515.6	1.175	1.442E-03	.0416	1.721E-03	.0497	1.709E-03	.0493	.5000	0	0
37	517.7	1.083	1.335E-03	.0385	1.592E-03	.0460	1.580E-03	.0456	.5500	0	0
38	511.3	1.027	1.270E-03	.0367	1.517E-03	.0438	1.506E-03	.0435	.6000	0	0
39	512.5	1.067	1.322E-03	.0382	1.580E-03	.0456	1.568E-03	.0453	.6000	0	0
40	514.9	.945	1.199E-03	.0346	1.434E-03	.0414	1.423E-03	.0411	.6500	0	0
41	518.8	.903	1.127E-03	.0326	1.350E-03	.0390	1.340E-03	.0387	.7000	0	0
43	521.7	.770	9.645E-04	.0279	1.156E-03	.0234	1.147E-03	.0231	.7500	0	0
44	534.1	.657	8.260E-04	.0239	9.902E-04	.0206	9.827E-04	.0204	.8000	0	0
45	524.9	.684	8.604E-04	.0248	1.032E-03	.0208	1.024E-03	.0206	.8000	0	0
46	526.0	.544	6.848E-04	.0194	8.214E-04	.0137	8.211E-04	.0137	.8500	0	0
47	526.4	.455	5.732E-04	.0166	7.729E-04	.0119	7.726E-04	.0119	.9000	0	0
48	526.9	.511	6.443E-04	.0186	8.104E-04	.0123	8.104E-04	.0123	.9000	0	0
49	526.9	.404	5.088E-04	.0147	6.104E-04	.0106	6.104E-04	.0106	.9500	0	0
50	527.0	.400	5.040E-04	.0146	6.046E-04	.0105	6.046E-04	.0105	1.0000	0	0
51	528.6	.776	9.806E-04	.0283	1.177E-03	.0240	1.177E-03	.0246	1.0000	0	0

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21BA

GROUP 10 1 CONFIG MODEL MACH NO 7.97 423.7 1320 24.89 5.11 ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW 0

Y-REF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	ME/FT (FT-LB)	MHEF-FH (R=.0175FT)	STFH (R=.0175FT)	SWITCH (R=.0175FT)
96.3	.044	1.978	3.73	1.874E-05	7.755E-08	1.915E 06	3.463E-02	2.933E-02	1
GAGE	TW	COOT	HITO	H(TO)/MHEF	H(.510)	H(.510)/MHEF	H(TAW)/MHEF	X/C	2Y/B
52	57.4	2.282	2.809E-03	.0911	3.353E-03	.0968	3.262E-03	.0942	.0820
53	510.8	1.864	2.304E-03	.0665	2.753E-03	.0795	2.714E-03	.0784	.3020
54	514.8	1.237	1.536E-03	.0444	1.837E-03	.0530	1.809E-03	.0523	.4470
55	521.0	.970	1.089E-03	.0314	1.304E-03	.0377	1.287E-03	.0372	.5910
56	527.2	.905	1.243E-03	.0359	1.491E-03	.0431	1.486E-03	.0429	.7360
57	529.2	.972	1.230E-03	.0355	1.476E-03	.0427	1.477E-03	.0426	.8810
58	534.7	.8731	7.298E-03	.2108	8.772E-03	.2533	8.355E-03	.2413	.0500
59	528.7	3.745	4.733E-03	.1367	5.681E-03	.1641	5.485E-03	.1584	.1000
60	527.0	2.441	3.079E-03	.0889	3.693E-03	.1067	3.585E-03	.1035	.2000
61	529.1	2.076	2.625E-03	.0758	3.151E-03	.0910	3.073E-03	.0888	.3000
62	532.8	1.589	2.017E-03	.0583	2.426E-03	.0701	2.386E-03	.0689	.5000
63	533.4	1.532	1.948E-03	.0563	2.341E-03	.0676	2.319E-03	.0670	.7000
64	531.1	.946	1.200E-03	.0346	1.441E-03	.0416	1.466E-03	.0423	.9000
65	538.0	3.497	4.472E-03	.1291	5.318E-03	.1554	5.248E-03	.1515	.1760
66	537.5	2.306	2.947E-03	.0851	3.545E-03	.1024	3.450E-03	.0996	.4840
67	537.9	2.134	2.724E-03	.0788	3.278E-03	.0948	3.244E-03	.0937	.7000
68	534.0	1.341	1.705E-03	.0493	2.050E-03	.0592	2.092E-03	.0604	.9000
69	536.5	3.278	4.164E-03	.1208	5.031E-03	.1453	4.899E-03	.1415	.1000
70	536.2	1.759	2.237E-03	.0646	2.689E-03	.0777	2.620E-03	.0757	.2000
71	536.5	1.465	1.869E-03	.0540	2.247E-03	.0649	2.183E-03	.0630	.4300
72	535.7	1.390	1.775E-03	.0513	2.134E-03	.0616	2.093E-03	.0604	.6000
73	535.3	1.115	1.422E-03	.0411	1.710E-03	.0494	1.717E-03	.0496	.8000
74	534.6	1.194	1.522E-03	.0439	1.830E-03	.0528	1.865E-03	.0539	.9000
75	532.3	6.949	9.079E-03	.2622	1.097E-02	.3168	1.065E-02	.3077	.1000
76	544.1	5.072	6.606E-03	.1508	7.978E-03	.2304	7.751E-03	.2238	.7500
77	537.2	2.684	3.459E-03	.0999	4.169E-03	.1204	4.062E-03	.1173	.5000
78	539.7	1.350	1.724E-03	.0498	2.074E-03	.0599	2.053E-03	.0593	.7000
79	539.7	1.559	1.998E-03	.0577	2.404E-03	.0694	2.448E-03	.0707	.7500
80	546.0	5.715	1.152E-02	.3327	1.396E-02	.4031	1.353E-02	.3907	.8500
81	540.1	3.324	4.295E-03	.1240	5.178E-03	.1495	5.029E-03	.1452	.3000
82	540.1	6.570	8.646E-03	.2497	1.046E-02	.3022	1.020E-02	.2944	.8500
83	549.3	6.044	7.945E-03	.2294	9.613E-03	.2776	9.310E-03	.2688	.9500
84	546.5	2.826	3.653E-03	.1055	4.405E-03	.1272	4.299E-03	.1241	.5000
85	547.1	3.076	3.980E-03	.1149	4.800E-03	.1386	4.874E-03	.1409	.9000

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AEDC(ARO-INC.), ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO-PSIA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL	MODEL	YAW
11	1		7.97	426.4	1313	29.94	.06	30.00	180		0
T-1NF	P-1NF	Q-1NF	V-1NF	H-1NF	H-1NF	W-1NF	HE/FT	MHEF-FH	STFR	SWITCH	
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT ³)	(LB-SEC/FT ²)	(FT-1)	(FT-1)	(R= .0175FT)	(R= .0175FT)	POSITION	
95.5	.045	1.99	.72	3.920E-05	7.713E-08	1.943E 06		3.471E-02	2.914E-02	1	
GAGE	TW	COOT	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(TAW)	H(TAW)/HREF	X/L	PHI	2Y/B
1	522.1	3.189	4.032E-03	.1162	4.835E-03	.1393	3.4469E-03	.1000	.0050		0
2	545.0	12.829	1.900E-02	.5474	2.318E-02	.6679	1.905E-02	.5489	.0120		0
3	553.7	5.475	1.309E-02	.3773	1.590E-02	.4581	1.372E-02	.3953	.0200		0
4	553.7	5.479	7.743E-03	.2231	9.302E-03	.2698	8.450E-03	.2435	.0400		0
5	545.5	4.199	5.471E-03	.1576	6.600E-03	.1502	6.085E-03	.1753	.0600		0
6	545.0	3.454	4.469E-03	.1207	5.382E-03	.1151	5.041E-03	.1453	.0800		0
7	540.0	3.035	3.889E-03	.1121	4.676E-03	.1147	4.424E-03	.1275	.1000		0
8	532.5	2.295	2.898E-03	.0832	3.459E-03	.0997	3.314E-03	.0955	.1500		0
9	518.0	2.295	2.898E-03	.0832	3.459E-03	.0997	3.314E-03	.0955	.1500		0
10	518.0	2.295	2.898E-03	.0832	3.459E-03	.0997	3.314E-03	.0955	.1500		0
11	518.0	2.295	2.898E-03	.0832	3.459E-03	.0997	3.314E-03	.0955	.1500		0
12	524.7	3.792	4.812E-03	.1386	5.773E-03	.1663	5.529E-03	.1593	.1500		0
13	518.9	2.545	3.205E-03	.0924	3.841E-03	.1107	3.680E-03	.1060	.1500		0
14	519.9	2.678	3.683E-03	.0773	3.207E-03	.0924	3.094E-03	.0891	.2000		0
15	513.2	2.678	3.349E-03	.0965	4.006E-03	.1154	3.864E-03	.1113	.2000		0
16	513.2	2.678	3.349E-03	.0965	4.006E-03	.1154	3.864E-03	.1113	.2000		0
17	513.2	2.678	3.349E-03	.0965	4.006E-03	.1154	3.864E-03	.1113	.2000		0
18	513.2	2.678	3.349E-03	.0965	4.006E-03	.1154	3.864E-03	.1113	.2000		0
19	517.0	2.112	2.621E-03	.0755	3.131E-03	.0902	3.017E-03	.0869	.2500		0
20	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
21	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
22	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
23	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
24	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
25	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
26	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
27	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
28	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
29	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
30	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
31	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
32	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
33	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
34	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
35	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
36	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
37	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
38	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
39	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
40	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
41	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
42	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
43	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
44	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
45	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
46	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
47	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
48	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
49	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
50	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0
51	486.5	2.038	2.503E-03	.0721	2.984E-03	.0860	2.891E-03	.0833	.2500		0

11/12/73

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-210A

GROUP CONFIG MODEL MACH NO POSPSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW
 11 1 7.97 426.4 1313 29.94 .06 30.00 180 0

T-1NF (DEG R)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT ³)	MU-1NF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H=.0175FI) (H=.0175FI)	SIFR (H=.0175FI) (H=.0175FI)	SWITCH POSITION
95.8	.045	1.59	3.22	3.920E-05	7.713E-0F	1.943E-06	3.471E-02	2.914E-02	1
GAGE	TW	CDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.5TC)/HREF	H(TAW)/HREF	X/C	2Y/B
52	545.2	2.642	3.320E-03	.0957	3.964E-03	.1142	3.762E-03	.1084	.0420
53	549.6	2.175	2.704E-03	.0780	3.237E-03	.0933	3.115E-03	.0897	.0320
54	514.6	1.545	1.936E-03	.0558	2.317E-03	.0664	2.227E-03	.0642	.0470
55	519.5	1.104	1.322E-03	.0401	1.668E-03	.0480	1.506E-03	.0463	.0510
56	546.1	1.326	1.656E-03	.0486	2.023E-03	.0583	1.970E-03	.0568	.0730
57	528.2	1.470	1.873E-03	.0540	2.249E-03	.0648	2.197E-03	.0633	.0810
58	531.8	5.388	6.899E-03	.1988	8.293E-03	.2389	7.647E-03	.2215	.0500
59	526.6	3.744	4.825E-03	.1390	5.792E-03	.1669	5.444E-03	.1570	.0100
60	525.6	2.656	3.373E-03	.0972	4.049E-03	.1167	3.830E-03	.1103	.0200
61	528.6	2.390	2.931E-03	.0845	3.623E-03	.1015	3.349E-03	.0965	.0300
62	531.9	1.948	2.367E-03	.0682	2.845E-03	.0820	2.729E-03	.0786	.0500
63	531.8	1.949	2.495E-03	.0719	2.999E-03	.0864	2.894E-03	.0835	.0700
64	525.4	1.349	1.739E-03	.0501	2.087E-03	.0601	2.074E-03	.0599	.0900
65	526.6	3.570	4.594E-03	.1325	5.635E-03	.1595	5.261E-03	.1516	.0170
66	526.6	2.316	2.983E-03	.0860	3.591E-03	.1035	3.405E-03	.0981	.0480
67	527.2	1.722	2.142E-03	.0632	2.631E-03	.0758	2.526E-03	.0757	.0900
68	517.9	4.299	5.547E-03	.1598	6.678E-03	.1924	6.334E-03	.1825	.0100
69	519.8	3.277	4.239E-03	.1221	5.106E-03	.1471	4.845E-03	.1396	.0200
70	541.3	2.710	3.512E-03	.1012	4.233E-03	.1220	4.004E-03	.1154	.0400
71	546.3	1.776	2.287E-03	.0659	2.752E-03	.0793	2.630E-03	.0758	.0600
72	531.3	1.356	1.735E-03	.0500	2.085E-03	.0601	2.045E-03	.0589	.0800
73	528.1	1.453	1.852E-03	.0534	2.224E-03	.0641	2.214E-03	.0639	.0900
74	559.0	6.454	1.121E-02	.3231	1.359E-02	.3912	1.283E-02	.3697	.0700
75	543.1	3.019	3.922E-03	.1130	4.729E-03	.1363	4.476E-03	.1290	.0300
76	542.7	2.557	3.321E-03	.0957	4.003E-03	.1153	3.800E-03	.1095	.0500
77	513.5	1.444	1.853E-03	.0534	2.224E-03	.0642	2.152E-03	.0620	.0700
78	513.9	1.863	2.391E-03	.0689	2.876E-03	.0829	2.864E-03	.0825	.0900
79	542.8	5.357	1.247E-02	.1594	1.512E-02	.4357	1.426E-02	.4109	.0100
80	547.5	5.219	1.237E-02	.1564	1.501E-02	.4326	1.417E-02	.4083	.0300
81	567.5	5.126	1.224E-02	.1528	1.486E-02	.4282	1.409E-02	.4059	.0500
82	553.3	5.685	1.486E-01	.2157	9.051E-03	.2608	8.533E-03	.2459	.0100
83	553.3	5.699	7.502E-03	.2162	9.070E-03	.2613	8.517E-03	.2483	.0500
84	550.1	5.679	7.445E-03	.2145	8.994E-03	.2591	8.493E-03	.2574	.0900

11/12/77

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VAJ52-21HA

GROUP	CONFID	PROFL	MACH NO	PHI-PSIA	TO-DFG R	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	MOLL MODEL	YAW
12	1		7.97	425.4	1294	34.98	-4.9R	30.00	180	-0
T-INF	P-INF	Q-INF	V-INF	RHO-INF	MU-INF	RE/FT	HREF-FR	STFR	SWITCH	
(DEG R)	(PSIA)	(FT/SEC)	(SLUGS/FT ³)	(LH-SEC/FT ²)	(FT-1)	(FT-1)	(H= .0175FT)	(H= .0175FT)	POSITION	
94.7	0.45	1.986	3801	3.956E-05	7.628E-06	1.971E 06	3.461E-02	2.894E-02	1	
GAGE	TW	GNOT	HITO	H(TO)/HREF	H(5TO)	H(5TC)/HREF	H(TAW)/HREF	X/L	PHI	2Y/B
1	528.5	3.652	4.743E-03	.1371	5.705E-03	.1649	3.944E-03	.1140	.0050	0
2	531.5	13.073	1.362E-02	.5670	2.404E-02	.6946	1.902E-02	.5497	.0120	0
3	576.5	10.094	1.347E-02	.4036	1.703E-02	.4922	1.414E-02	.4099	.0200	0
6	554.5	4.636	6.232E-03	.2466	1.036E-02	.2994	9.051E-03	.2615	.0500	0
7	548.7	3.840	5.121E-03	.1801	7.549E-03	.2181	6.745E-03	.1949	.0600	0
8	540.7	3.371	4.450E-03	.1480	6.194E-03	.1790	5.629E-03	.1627	.0800	0
10	524.9	3.718	3.514E-03	.1286	5.370E-03	.1552	4.935E-03	.1426	.1000	0
12	530.7	4.209	5.483E-03	.1015	4.222E-03	.1220	3.936E-03	.1137	.1500	0
13	523.1	2.574	3.320E-03	.0954	3.482E-03	.1152	3.714E-03	.1075	.1500	0
16	515.2	2.507	3.303E-03	.0955	3.460E-03	.1144	3.720E-03	.1075	.2000	0
17	518.0	3.148	4.020E-03	.1162	4.423E-03	.1394	4.529E-03	.1309	.2000	0
19	511.0	2.505	3.184E-03	.0920	3.413E-03	.1102	3.474E-03	.1034	.2250	0
20	510.0	2.471	3.094E-03	.0894	3.495E-03	.1068	3.490E-03	.1008	.2500	0
22	498.2	2.311	2.484E-03	.0835	3.444E-03	.0956	3.261E-03	.0942	.2750	0
23	486.8	2.220	2.770E-03	.0800	3.305E-03	.0955	3.126E-03	.0903	.3000	0
24	500.6	3.012	3.774E-03	.1091	4.510E-03	.1303	4.264E-03	.1232	.3000	0
25	512.4	3.271	4.111E-03	.1188	4.912E-03	.1419	4.644E-03	.1342	.3000	0
26	513.8	3.197	4.024E-03	.1183	4.410E-03	.1390	4.546E-03	.1314	.3000	0
29	496.5	2.212	2.754E-03	.0797	3.291E-03	.0951	3.113E-03	.0899	.3250	0
30	486.0	2.199	2.741E-03	.0792	3.270E-03	.0945	3.043E-03	.0894	.3500	0
31	486.3	2.046	2.451E-03	.0737	3.043E-03	.0879	2.874E-03	.0832	.4000	0
32	499.0	2.210	2.765E-03	.0799	3.301E-03	.0954	3.122E-03	.0902	.4000	0
33	498.9	1.777	2.473E-03	.0715	2.953E-03	.0853	2.792E-03	.0807	.4500	0
34	511.1	1.993	2.366E-03	.0689	2.850E-03	.0824	2.695E-03	.0779	.5000	0
35	512.4	1.777	2.233E-03	.0649	2.669E-03	.0771	2.523E-03	.0729	.5000	0
37	514.7	1.820	2.293E-03	.0663	2.742E-03	.0792	2.591E-03	.0749	.5500	0
38	508.2	1.740	2.265E-03	.0654	2.710E-03	.0783	2.561E-03	.0740	.6000	0
39	510.7	1.691	2.147E-03	.0621	2.571E-03	.0743	2.429E-03	.0702	.6000	0
40	512.0	1.699	2.161E-03	.0624	2.548E-03	.0748	2.444E-03	.0706	.6500	0
41	516.1	1.649	2.164E-03	.0609	2.522E-03	.0730	2.387E-03	.0690	.7000	0
43	520.0	1.659	2.141E-03	.0590	2.450E-03	.0704	2.312E-03	.0668	.7500	0
44	524.1	1.665	2.153E-03	.0621	2.450E-03	.0747	2.434E-03	.0704	.8000	0
45	524.4	1.546	1.994E-03	.0577	2.401E-03	.0644	2.264E-03	.0655	.8000	0
46	527.2	1.613	2.092E-03	.0604	2.515E-03	.0727	2.393E-03	.0691	.8500	0
47	528.2	1.689	2.192E-03	.0634	2.637E-03	.0762	2.527E-03	.0730	.9000	0
48	528.3	1.670	2.117E-03	.0612	2.544E-03	.0736	2.440E-03	.0705	.9000	0
49	528.8	1.712	2.225E-03	.0643	2.677E-03	.0773	2.594E-03	.0747	.9500	0
50	528.6	2.048	2.713E-03	.0784	3.263E-03	.0943	3.166E-03	.0915	1.0000	0
51	530.5	2.372	3.089E-03	.0893	3.714E-03	.1074	3.607E-03	.1042	1.0000	0
										.2140

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21BA

ORCUP	CONFIG	MODEL	MACH NO	PO,PSIA	TD,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	HOLL MODEL	YAW
12	1		7.97	425.6	12.44	34.98	-4.03	30.00	180	-0
T-1NF (DEG R)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT3)	MU-1NF (LH-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH (H=.0175FT) POSITION	
94.7	40.5	1.984	3401	3.956E-05	7.628E-08	1.971E 04	3.461E-02	2.898E-02	1	
GAGE	TW	UNIT	H(TO)	H(TO)/HREF	H(.91U)	H(.91C)/HREF	H(TAW)	X/C	2Y/B	
52	5.5.1	2.424	3.500E-03	.1029	4.257E-03	.1230	3.933E-03	.1136	.2500	
53	5.6.7	2.448	3.100E-03	.0896	3.710E-03	.1072	3.478E-03	.1005	.2500	
54	5.14.5	1.758	2.649E-03	.0548	2.649E-03	.0777	2.517E-03	.0727	.2500	
55	5.20.7	1.352	1.739E-03	.0502	2.087E-03	.0603	1.957E-03	.0565	.2500	
56	5.28.1	1.715	2.226E-03	.0643	2.677E-03	.0774	2.539E-03	.0734	.2500	
57	5.30.4	2.180	2.849E-03	.0821	3.419E-03	.0988	3.254E-03	.0940	.2500	
58	5.30.5	5.036	6.558E-03	.1895	7.892E-03	.2281	7.108E-03	.2054	.4000	
59	5.27.0	2.792	4.916E-03	.1421	5.911E-03	.1708	5.405E-03	.1562	.4000	
60	5.26.6	2.735	3.544E-03	.1024	4.261E-03	.1231	3.919E-03	.1133	.4000	
61	5.28.9	2.377	3.090E-03	.0893	3.717E-03	.1074	3.437E-03	.0993	.4000	
62	5.33.0	2.078	2.714E-03	.0784	3.269E-03	.0945	3.051E-03	.0882	.4000	
63	5.32.8	2.236	2.921E-03	.0844	3.518E-03	.1016	3.309E-03	.0956	.4000	
64	5.27.4	1.717	2.228E-03	.0644	2.680E-03	.0774	2.604E-03	.0752	.4000	
65	5.36.3	3.531	4.632E-03	.1339	5.544E-03	.1413	5.162E-03	.1492	.5000	
66	5.37.1	2.328	3.158E-03	.0910	3.797E-03	.1097	3.501E-03	.1012	.5000	
67	5.44.5	2.174	2.847E-03	.0823	3.430E-03	.0991	3.218E-03	.0930	.5000	
68	5.29.0	1.942	2.524E-03	.0729	3.036E-03	.0877	2.958E-03	.0855	.5000	
69	5.2.5	5.092	6.736E-03	.1947	8.133E-03	.2350	7.494E-03	.2166	.6000	
70	5.2.0	3.812	5.049E-03	.1456	6.084E-03	.1758	5.612E-03	.1622	.6000	
71	5.33.7	3.352	4.442E-03	.1284	5.365E-03	.1550	4.931E-03	.1425	.6000	
72	5.37.6	2.307	3.032E-03	.0876	3.656E-03	.1056	3.349E-03	.0982	.6000	
73	5.32.4	1.730	2.250E-03	.0653	2.720E-03	.0786	2.599E-03	.0751	.6000	
74	5.31.1	1.802	2.349E-03	.0679	2.828E-03	.0817	2.752E-03	.0795	.6000	
75	5.3.7	3.016	3.997E-03	.1155	4.827E-03	.1261	4.441E-03	.1164	.7500	
76	5.33.1	2.730	3.614E-03	.1044	4.364E-03	.1195	4.027E-03	.1164	.7500	
77	5.33.5	1.605	2.999E-03	.0607	2.528E-03	.0731	2.377E-03	.0687	.7500	
78	5.34.7	2.162	2.832E-03	.0818	3.411E-03	.0946	3.135E-03	.0958	.7500	
79	5.74.8	11.743	1.623E-02	.4689	1.978E-02	.5715	1.808E-02	.5224	.8500	
80	5.57.1	6.566	8.858E-03	.2560	1.074E-02	.3103	9.854E-03	.2848	.8500	
81	5.46.2	3.594	4.778E-03	.1381	5.775E-03	.1669	5.330E-03	.1540	.8500	
83	5.62.7	7.631	1.037E-02	.2997	1.259E-02	.3639	1.152E-02	.3329	.9500	
84	5.62.0	7.575	1.029E-02	.2972	1.249E-02	.3609	1.152E-02	.3328	.9500	
85	5.69.0	4.697	6.268E-03	.1811	7.581E-03	.2191	7.142E-03	.2122	.9500	

11/12/77

AEDC (ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VA352-218A

NRUP	CONFID	MODEL	MACH	NU	PU,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	HOLL	MODEL	YAW
13	1		7.96		323.7	1281	24.88	5.12	30.00	180		0
T-1AF (DEG H)	P-1AF (PSIA)	U-1AF (PSIA)	V-1AF (FT/SEC)	W-1AF (SLUGS/FT ³)	NU-1AF (LB-SEC/FT ²)	ME/FT (FT-1)	ME/FT (FT-1)	ME/FT (FT-1)	ME/FT (FT-1)	ME/FT (FT-1)	ME/FT (FT-1)	ME/FT (FT-1)
93.7	.034	1.510	3775	3.067E-06	7.543E-06	1.515F 06	1.515F 06	1.515F 06	1.515F 06	1.515F 06	1.515F 06	1.515F 06
GAGE	TV	W00T	H(TO)	H(TO)/HREF	H(TO)	H(TO)/HREF	H(TO)	H(TO)/HREF	H(TO)	H(TO)/HREF	H(TO)	H(TO)/HREF
1	520.7	2.145	2.821E-03	.0934	3.392E-03	.1124	2.4501E-03	.0428	X/L	PHI	2Y/B	
2	550.7	10.485	1.521E-02	.5037	1.450E-02	.6126	1.575E-02	.5215	.0050			0
3	546.9	7.507	1.022E-02	.3386	1.239E-02	.4102	1.104E-02	.3656	.0120			0
4	535.6	4.360	5.849E-03	.1937	7.063E-03	.2339	6.566E-03	.2174	.0200			0
5	530.2	2.974	3.961E-03	.1312	4.775E-03	.1582	4.527E-03	.1499	.0400			0
6	527.3	2.361	3.132E-03	.1037	3.774E-03	.1250	3.630E-03	.1202	.0600			0
7	524.3	1.999	2.642E-03	.0875	3.180E-03	.1053	3.047E-03	.1022	.0800			0
8	517.7	1.365	1.784E-03	.0592	2.150E-03	.0712	2.111E-03	.0699	.1000			0
9	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
10	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
11	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
12	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
13	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
14	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
15	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
16	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
17	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
18	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
19	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
20	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
21	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
22	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
23	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
24	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
25	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
26	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
27	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
28	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
29	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
30	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
31	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
32	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
33	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
34	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
35	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
36	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
37	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
38	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
39	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
40	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
41	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
42	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
43	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
44	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
45	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
46	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
47	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
48	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
49	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
50	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
51	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0
52	512.7	1.042	1.354E-03	.0462	1.670E-03	.0553	1.654E-03	.0549	.1500			0

11/12/73

AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21A

GROUP CONFIG MODEL MACH NO PUMPSTA 10.DFG H ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND HOLL MODEL YAW
13 1 7.96 323.7 1291 24.88 5.12 30.00 180 0

Y-REF (DEG R)	Q-REF (PSIA)	V-REF (FT/SEC)	HUO-REF (SLUGS/FT ³)	MU-REF (UH-SEC/FT ²)	WE/FT (FI-1)	HREF-FM (H= .0175EI)	STEN (H= .0175EI)	SWITCH POSITION	
93.7	.034	1.519	3.067E-05	7.543E-08	1.515E 06	3.019E-02	3.246E-02	1	
GAGE	TM	COOT	H(TO)	H(REF)	H(.GT0)	H(.STG)/HREF	M(TAW)	X/C	2Y/B
52	519.4	1.452	2.402E-03	.0795	2.878E-03	.0553	2.798E-03	.0927	.2500
53	519.8	1.406	1.920E-03	.0639	2.314E-03	.0766	2.200E-03	.0755	.2500
54	512.7	1.047	1.363E-03	.0451	1.630E-03	.0542	1.611E-03	.0534	.2500
55	516.4	.695	9.095E-04	.0301	1.093E-03	.0362	1.074E-03	.0357	.2500
56	521.0	.728	9.578E-04	.0317	1.152E-03	.0382	1.148E-03	.0380	.2500
57	522.5	.723	9.533E-04	.0316	1.147E-03	.0380	1.147E-03	.0380	.2500
58	529.1	.4725	6.284E-03	.0281	7.575E-03	.1452	4.412E-03	.1594	.4000
59	523.8	3.137	4.143E-03	.1372	4.997E-03	.1452	4.412E-03	.1594	.4000
60	521.2	1.991	2.623E-03	.0868	3.151E-03	.1044	3.057E-03	.1013	.4000
61	522.3	1.739	2.293E-03	.0759	2.758E-03	.0914	2.649E-03	.0891	.4000
62	524.5	1.302	1.721E-03	.0570	2.072E-03	.0686	2.038E-03	.0675	.4000
63	524.8	1.249	1.652E-03	.0547	1.989E-03	.0659	1.970E-03	.0652	.4000
64	523.0	.726	9.571E-04	.0317	1.152E-03	.0381	1.173E-03	.0388	.4000
65	529.1	2.846	3.851E-03	.1275	4.641E-03	.1537	4.524E-03	.1499	.5000
66	527.2	1.844	2.466E-03	.0810	2.946E-03	.0976	2.867E-03	.0950	.5000
67	527.5	1.730	2.296E-03	.0760	2.766E-03	.0916	2.734E-03	.0905	.5000
68	524.4	1.063	1.404E-03	.0465	1.691E-03	.0560	1.725E-03	.0571	.5000
69	526.9	2.668	3.537E-03	.1172	4.261E-03	.1411	4.148E-03	.1374	.6000
70	524.0	1.445	1.909E-03	.0632	2.298E-03	.0761	2.230E-03	.0741	.6000
71	525.3	1.273	1.684E-03	.0558	2.028E-03	.0762	1.970E-03	.0652	.6000
72	524.5	1.201	1.590E-03	.0527	1.914E-03	.0634	1.877E-03	.0622	.6000
73	524.5	.928	1.277E-03	.0406	1.477E-03	.0489	1.483E-03	.0491	.6000
74	529.5	5.428	7.590E-03	.2514	9.175E-03	.3039	8.410E-03	.2951	.6000
75	522.2	3.034	4.051E-03	.1342	4.887E-03	.1619	4.749E-03	.1573	.7500
76	529.2	2.115	2.813E-03	.0932	3.391E-03	.1123	3.304E-03	.1094	.7500
77	523.6	1.035	1.367E-03	.0453	1.645E-03	.0545	1.628E-03	.0539	.7500
78	525.7	1.283	1.699E-03	.0563	2.046E-03	.0778	2.083E-03	.0690	.7500
79	546.2	7.263	9.884E-03	.3273	1.197E-02	.3965	1.160E-02	.3843	.8500
80	510.4	2.653	3.534E-03	.1170	4.261E-03	.1411	4.134E-03	.1371	.8500
81	540.7	5.039	6.806E-03	.2254	8.229E-03	.2726	8.020E-03	.2656	.8500
83	541.0	5.011	6.772E-03	.2243	8.190E-03	.2712	7.932E-03	.2627	.8500
84	520.2	2.298	3.060E-03	.1014	3.690E-03	.1222	3.601E-03	.1193	.9500
85	528.7	2.138	2.842E-03	.0941	3.425E-03	.1134	3.441E-03	.1153	.9500

11/12/73

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A
VA352-210A

GROUP	CONF	MODEL	MACH NO	PO, PSIA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	HOLL MODEL	YAW	
14	1		7.96	327.6	1296	29.94	.06	30.00	180	0	
T-TNF (DEG R)	P-TNF (PSIA)	Q-TNF (PI/SEC)	RHO-TNF (SLUGS/FT ³)	MU-TNF (LB-SEC/FT ²)	HE/FT (FT-1)	HREF-FR (H=.0175ETL (H=.0175ETL) POSITION	STFR (H=.0175ETL (H=.0175ETL) POSITION	SWITCH			
94.8	.035	1.534	3798	7.634E-08	1.526E 06	3.044E-02	3.290E-02	1			
GAGE	TW	COOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	HREF	X/L	PHI	2Y/B
1	519.2	2.600	3.461E-03	.1132	4.154E-03	.1265	2.076E-03	.0978	.0050		0
2	550.2	12.049	1.657E-02	.5443	2.016E-02	.6624	1.561E-02	.5457	.0120		0
3	555.3	6.458	1.141E-02	.3749	1.383E-02	.4544	1.195E-02	.3927	.0200		0
4	543.4	5.103	6.711E-03	.2728	8.192E-03	.2691	7.394E-03	.2430	.0400		0
5	517.6	3.645	4.803E-03	.1578	5.792E-03	.1903	5.341E-03	.1754	.0800		0
6	512.7	2.993	3.919E-03	.1288	4.721E-03	.1551	4.422E-03	.1453	.0800		0
7	526.2	2.633	3.419E-03	.1123	4.110E-03	.1350	3.889E-03	.1278	.1000		0
8	514.4	1.954	2.499E-03	.0821	2.996E-03	.0584	2.870E-03	.0943	.1500	0	0
9	522.1	3.221	4.160E-03	.1367	4.996E-03	.1641	4.784E-03	.1572	.1500	30.0000	
10	517.8	2.151	2.763E-03	.0908	3.315E-03	.1089	3.175E-03	.1043	.1500	45.5000	
11	508.4	1.947	2.344E-03	.0770	2.806E-03	.0822	2.704E-03	.0889	.2000		0
12	513.2	2.316	2.957E-03	.0972	3.544E-03	.1164	3.417E-03	.1122	.2000		.1070
13	506.3	1.741	2.244E-03	.0740	2.596E-03	.0886	2.597E-03	.0853	.2250		0
14	499.4	1.684	2.118E-03	.0696	2.524E-03	.0831	2.449E-03	.0805	.2500		0
15	498.3	1.600	2.004E-03	.0658	2.393E-03	.0786	2.320E-03	.0762	.2750		0
16	497.5	1.571	1.966E-03	.0646	2.347E-03	.0771	2.275E-03	.0747	.3000	0	0
17	500.4	2.237	2.812E-03	.0924	3.359E-03	.1103	3.256E-03	.1070	.3000	34.0000	
18	502.9	2.444	3.085E-03	.1013	3.697E-03	.1211	3.574E-03	.1174	.3000	40.0000	
19	504.5	2.445	3.087E-03	.1014	3.691E-03	.1213	3.578E-03	.1175	.3000	45.0000	
20	497.1	1.521	1.903E-03	.0625	2.271E-03	.0746	2.202E-03	.0723	.3250		0
21	496.6	1.490	1.861E-03	.0612	2.224E-03	.0731	2.156E-03	.0708	.3500		0
22	497.0	1.374	1.719E-03	.0565	2.052E-03	.0674	1.989E-03	.0654	.4000		0
23	500.2	1.549	1.945E-03	.0639	2.733E-03	.0763	2.525E-03	.0740	.4000		.1070
24	499.5	1.320	1.646E-03	.0544	1.978E-03	.0650	1.917E-03	.0630	.4500		0
25	511.4	1.328	1.670E-03	.0549	1.996E-03	.0656	1.935E-03	.0636	.5000		0
26	513.5	1.264	1.594E-03	.0524	1.905E-03	.0626	1.847E-03	.0607	.5000		0
27	514.3	1.252	1.561E-03	.0519	1.890E-03	.0621	1.832E-03	.0602	.5500		.1070
28	517.0	1.228	1.556E-03	.0511	1.861E-03	.0611	1.804E-03	.0593	.6000		0
29	509.4	1.181	1.500E-03	.0493	1.796E-03	.0590	1.741E-03	.0572	.6000		0
30	510.1	1.128	1.435E-03	.0471	1.718E-03	.0564	1.665E-03	.0547	.6500		.1070
31	513.2	1.043	1.331E-03	.0437	1.595E-03	.0524	1.545E-03	.0508	.7000		0
32	516.1	.933	1.196E-03	.0393	1.434E-03	.0471	1.399E-03	.0456	.7500		0
33	518.6	.840	1.087E-03	.0355	1.294E-03	.0426	1.256E-03	.0412	.8000		0
34	519.3	.775	9.949E-04	.0328	1.197E-03	.0393	1.159E-03	.0381	.8000		.1070
35	520.3	.649	8.474E-04	.0292	1.045E-03	.0350	1.000E-03	.0342	.8500		0
36	520.4	.588	7.545E-04	.0249	9.108E-04	.0299	8.951E-04	.0294	.9000		0
37	521.1	.616	7.942E-04	.0261	9.536E-04	.0313	9.372E-04	.0308	.9000		0
38	520.7	.457	6.016E-04	.0194	7.223E-04	.0237	7.150E-04	.0235	.9500		.1070
39	519.4	.451	6.049E-04	.0220	8.040E-04	.0264	7.995E-04	.0263	1.0000		0
40	521.5	.452	1.010E-03	.0361	1.321E-03	.0434	1.313E-03	.0431	1.0000		.2140

11/12/73

AEDC (ARO, IAC, J) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VAJ52-210A

GROUP CONFIG MODEL MACH NO PU,PSIA TO,DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW

14 1 7.96 327.5 1296 29.94 30.00 180 0

Y-REF IDEG RI	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FI-1)	HREF-FR (H=.0175FI) (H=.0175FI) POSITION	STFR (H=.0175FI) (H=.0175FI) POSITION	2Y/B
94.8	0.35	1.53	3.067E-05	7.634E-08	1.526F 06	3.044E-02	3.290E-02	1
GAGE	Y	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	HREF-FR (H=.0175FI) (H=.0175FI) POSITION	STFR (H=.0175FI) (H=.0175FI) POSITION	2Y/B
52	546.9	2.265	2.848E-03	0.942	3.432E-03	0.127	3.254E-03	0.820
53	518.8	1.835	2.330E-03	0.765	2.789E-03	0.916	2.682E-03	0.820
54	513.3	1.295	1.654E-03	0.543	1.942E-03	0.651	1.905E-03	0.820
55	517.6	0.911	1.173E-03	0.384	1.404E-03	0.461	1.351E-03	0.820
56	521.9	1.020	1.317E-03	0.433	1.541E-03	0.520	1.539E-03	0.820
57	523.0	1.024	1.323E-03	0.435	1.540E-03	0.522	1.539E-03	0.820
58	529.3	4.653	6.065E-03	1.993	7.299E-03	0.238	6.763E-03	0.820
59	525.2	3.248	4.276E-03	1.405	5.139E-03	1.488	4.832E-03	0.820
60	524.5	2.632	3.492E-03	0.950	3.476E-03	1.142	3.286E-03	0.820
61	526.3	1.924	2.494E-03	0.621	3.003E-03	0.987	2.854E-03	0.820
62	527.2	1.513	1.947E-03	0.646	2.366E-03	0.777	2.269E-03	0.820
63	526.6	1.527	1.984E-03	0.652	2.385E-03	0.744	2.305E-03	0.820
64	521.5	0.982	1.267E-03	0.416	1.522E-03	0.500	1.515E-03	0.820
65	533.9	3.029	3.972E-03	1.305	4.785E-03	1.572	4.547E-03	0.820
66	522.1	1.979	2.549E-03	0.651	3.118E-03	1.023	2.936E-03	0.820
67	523.2	1.379	1.743E-03	0.729	2.669E-03	0.677	2.573E-03	0.820
68	526.1	3.604	4.745E-03	0.586	2.142E-03	0.704	2.138E-03	0.820
69	526.7	2.749	3.619E-03	1.189	5.721E-03	1.679	5.424E-03	0.820
70	526.9	2.296	3.022E-03	0.993	4.363E-03	1.433	4.140E-03	0.820
71	531.0	1.536	2.006E-03	0.659	2.615E-03	1.197	3.446E-03	0.820
72	526.3	1.127	1.463E-03	0.481	1.759E-03	0.793	2.308E-03	0.820
73	524.5	1.151	1.491E-03	0.490	1.792E-03	0.678	1.725E-03	0.820
74	528.6	5.275	7.994E-03	2.625	9.665E-03	0.549	1.747E-03	0.820
75	529.8	2.520	3.331E-03	1.094	4.020E-03	3.175	9.136E-03	0.820
76	528.7	2.114	2.787E-03	0.916	3.362E-03	1.121	3.404E-03	0.820
77	528.7	1.156	1.505E-03	0.495	1.812E-03	1.104	3.191E-03	0.820
78	528.0	1.562	1.955E-03	0.642	2.352E-03	0.595	1.749E-03	0.820
79	527.5	7.791	1.054E-02	3.463	1.279E-02	0.773	2.442E-03	0.820
80	527.9	6.409	9.329E-03	3.064	1.131E-02	0.420	1.206E-02	0.820
81	554.4	6.429	8.663E-03	2.844	1.050E-02	3.117	1.068E-02	0.820
82	549.2	4.813	6.441E-03	2.116	7.739E-03	3.449	4.956E-03	0.820
83	545.1	4.190	5.574E-03	1.832	6.739E-03	2.560	7.446E-03	0.820
84	543.7	4.442	5.901E-03	1.939	7.124E-03	2.214	6.440E-03	0.820
85	543.7	4.442	5.901E-03	1.939	7.124E-03	2.242	6.440E-03	0.820
								0.820

11/12/73

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

CONFIG	MODEL	MACH NO	PO, PSTA	TOT, DEG R	ALPHA-MODEL	ALPHA-SECTION	ROLL	MODEL	YAW
15	1	7.96	326.5	1313	35.00	-5.00	30.00	180	-0
T-INF	P-INF	Q-INF	V-INF	RHO-INF	W-INF	H-INF	SIFR	SWITCH	
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT3)	(LBS-SEC/FT2)	(FT-1)			
96.0	.035	1.532	3422	3.019E-05	7.731E-08	1.493F 04			
GAGE	TA	SCOT	H(TO)	H(TO)/HREF	H(.910)	H(.510)/HREF	H(TAW)/HREF		
1	521.1	3.289	4.155E-03	.1364	4.081E-03	.1636	3.444F-03	.1138	0
2	541.4	12.025	1.721E-02	.5650	2.084E-02	.6858	1.670E-02	.5484	0
3	553.3	5.300	1.224E-02	.4021	1.480E-02	.4861	1.243E-02	.4080	0
4	541.0	5.800	7.515E-03	.2468	9.055E-03	.2973	7.951E-03	.2611	0
5	518.7	4.249	5.461E-03	.1793	6.569E-03	.2157	5.894F-03	.1935	0
6	530.8	3.509	4.487E-03	.1474	5.393E-03	.1771	4.917E-03	.1615	0
7	526.3	3.101	3.943E-03	.1295	4.733E-03	.1554	4.360E-03	.1432	0
8	517.3	2.857	3.088E-03	.1014	3.648E-03	.1214	3.452E-03	.1134	0
9	523.4	3.776	4.783E-03	.1571	5.737E-03	.1884	5.352E-03	.1757	0
10	516.7	2.299	2.884E-03	.0948	3.459E-03	.1136	3.229E-03	.1060	0
11	511.9	2.321	2.898E-03	.0951	3.466E-03	.1138	3.258E-03	.1070	0
12	515.0	2.795	3.504E-03	.1150	4.194E-03	.1377	3.941E-03	.1294	0
13	509.4	2.208	2.749E-03	.0903	3.286E-03	.1079	3.085E-03	.1013	0
14	498.4	2.159	2.655E-03	.0872	3.165E-03	.1039	2.990E-03	.0982	0
15	438.2	2.044	2.509E-03	.0824	2.911E-03	.0982	2.829E-03	.0929	0
16	497.6	1.990	2.441E-03	.0802	2.910E-03	.0956	2.753E-03	.0904	0
17	501.7	2.661	3.200E-03	.1077	3.913E-03	.1285	3.701E-03	.1215	0
18	503.3	2.881	3.559E-03	.1169	4.248E-03	.1395	4.017E-03	.1319	0
19	504.1	2.833	3.503E-03	.1150	4.182E-03	.1373	3.954E-03	.1298	0
20	498.0	1.943	2.344E-03	.0783	2.842E-03	.0933	2.689E-03	.0883	0
21	497.9	1.920	2.356E-03	.0774	2.808E-03	.0922	2.654E-03	.0872	0
22	498.6	1.766	2.169E-03	.0712	2.585E-03	.0849	2.445E-03	.0803	0
23	501.1	1.941	2.391E-03	.0785	2.853E-03	.0937	2.698E-03	.0886	0
24	500.7	1.720	2.114E-03	.0696	2.527E-03	.0830	2.390E-03	.0785	0
25	502.5	1.650	2.036E-03	.0668	2.429E-03	.0794	2.297E-03	.0754	0
26	504.1	1.583	1.957E-03	.0643	2.336E-03	.0767	2.209E-03	.0725	0
27	505.7	1.562	1.935E-03	.0635	2.311E-03	.0759	2.185E-03	.0717	0
28	504.8	1.519	1.880E-03	.0620	2.258E-03	.0741	2.134E-03	.0701	0
29	510.5	1.483	1.844E-03	.0607	2.210E-03	.0726	2.088E-03	.0686	0
30	511.9	1.443	1.802E-03	.0592	2.155E-03	.0704	2.037E-03	.0669	0
31	515.0	1.346	1.688E-03	.0554	2.020E-03	.0663	1.908E-03	.0627	0
32	517.7	1.220	1.535E-03	.0504	1.839E-03	.0604	1.737E-03	.0570	0
33	520.1	1.161	1.465E-03	.0481	1.755E-03	.0576	1.654E-03	.0544	0
34	520.6	1.049	1.374E-03	.0451	1.647E-03	.0541	1.555E-03	.0511	0
35	520.7	1.071	1.457E-03	.0410	2.226E-03	.0731	2.120E-03	.0696	0
36	521.6	.904	1.143E-03	.0375	1.371E-03	.0450	1.314E-03	.0432	0
37	521.4	.884	1.123E-03	.0349	1.346E-03	.0442	1.291E-03	.0424	0
38	521.4	.785	.911E-03	.0326	1.149E-03	.0390	1.149E-03	.0377	0
39	520.6	.936	1.182E-03	.0388	1.411E-03	.0465	1.376E-03	.0452	0
40	522.6	1.273	1.610E-03	.0529	1.931E-03	.0634	1.475E-03	.0616	0
41	521.4								0
42	520.6								0
43	522.6								0
44	521.4								0
45	520.6								0
46	521.4								0
47	520.6								0
48	521.4								0
49	520.6								0
50	521.4								0
51	520.6								0
52	521.4								0
53	520.6								0
54	521.4								0
55	520.6								0
56	521.4								0
57	520.6								0
58	521.4								0
59	520.6								0
60	521.4								0
61	520.6								0
62	521.4								0
63	520.6								0
64	521.4								0
65	520.6								0
66	521.4								0
67	520.6								0
68	521.4								0
69	520.6								0
70	521.4								0
71	520.6								0
72	521.4								0
73	520.6								0
74	521.4								0
75	520.6								0
76	521.4								0
77	520.6								0
78	521.4								0
79	520.6								0
80	521.4								0
81	520.6								0
82	521.4								0
83	520.6								0
84	521.4								0
85	520.6								0
86	521.4								0
87	520.6								0
88	521.4								0
89	520.6								0
90	521.4								0
91	520.6								0
92	521.4								0
93	520.6								0
94	521.4								0
95	520.6								0
96	521.4								0
97	520.6								0
98	521.4								0
99	520.6								0
100	521.4								0

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AEDC (AHO, INC.) ARNOLD AFS, TENNESSEE
VOH KAHMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-218A

GROUP 15 CONFID 1 MACH NO 7.96 P01PSIA 1313 T01DEG H 35.00 ALPHA-MODEL -5.00 ALPHA-SECTOR 30.00 ALPHA-PREBEND 180 ROLL MODEL YAW -0

T-1NF (DEGR)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT3)	MU-1NF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FH (RE .0175FT)	STEP (RE .0175FT) POSITION	2Y/B
GAGE	T1	COOT	H(TO)	H(TO)/HREF	H(.5TC)/HREF	H(TAW)/HREF	X/C		
52	516.2	2.549	3.204E-03	.1054	3.433E-03	.1259	3.542E-03	.1103	.0420
53	518.4	2.177	2.700E-03	.0848	3.233E-03	.1062	3.033E-03	.0996	.3020
54	512.4	1.582	1.477E-03	.0649	2.365E-03	.0777	2.216E-03	.0728	.2500
55	517.6	1.144	1.434E-03	.0472	1.723E-03	.0566	1.617E-03	.0531	.2500
56	522.7	1.277	1.616E-03	.0531	1.938E-03	.0636	1.839E-03	.0504	.2500
57	523.7	1.385	1.705E-03	.0560	2.045E-03	.0672	1.949E-03	.0640	.2500
58	527.6	4.600	5.854E-03	.1924	7.034E-03	.2310	6.443E-03	.2083	.2500
59	523.8	3.339	4.232E-03	.1390	5.076E-03	.1667	4.647E-03	.1526	.4000
60	523.2	2.437	3.084E-03	.1013	3.702E-03	.1216	3.409E-03	.1119	.4000
61	524.5	2.130	2.703E-03	.0887	3.243E-03	.1065	3.002E-03	.0986	.4000
62	527.0	1.706	2.171E-03	.0713	2.606E-03	.0856	2.435E-03	.0800	.4000
63	526.7	1.780	2.265E-03	.0744	2.719E-03	.0893	2.561E-03	.0841	.4000
64	521.2	1.222	1.540E-03	.0508	1.857E-03	.0610	1.805E-03	.0593	.4000
65	521.4	3.193	4.086E-03	.1342	4.911E-03	.1613	4.545E-03	.1493	.4000
66	520.4	3.143	2.765E-03	.0908	3.322E-03	.1091	3.067E-03	.1007	.5000
67	528.4	1.510	2.308E-03	.0758	2.772E-03	.0910	2.604E-03	.0855	.5000
68	525.1	1.542	1.963E-03	.0651	2.379E-03	.0781	2.319E-03	.0761	.5000
69	527.2	4.547	5.913E-03	.1942	7.118E-03	.2337	6.569E-03	.2157	.5000
70	525.7	3.424	4.411E-03	.1448	5.308E-03	.1743	4.703E-03	.1610	.6000
71	526.0	2.019	3.917E-03	.1246	4.707E-03	.1546	4.334E-03	.1423	.6000
72	520.9	2.669	2.644E-03	.0849	3.180E-03	.1044	2.960E-03	.0972	.6000
73	527.4	1.448	1.845E-03	.0622	2.275E-03	.0747	2.174E-03	.0715	.6000
74	527.0	1.474	1.874E-03	.0616	2.253E-03	.0740	2.193E-03	.0720	.6000
75	527.5	6.564	8.577E-03	.2817	1.035E-02	.3400	9.524E-03	.3127	.6000
76	525.7	2.712	3.496E-03	.1146	4.199E-03	.1379	3.870E-03	.1271	.7500
77	525.3	2.433	3.124E-03	.1027	3.765E-03	.1236	3.480E-03	.1143	.7500
78	528.0	1.428	1.814E-03	.0597	2.184E-03	.0717	2.056E-03	.0675	.7500
79	529.5	1.772	2.262E-03	.0743	2.717E-03	.0892	2.441E-03	.0867	.7500
80	526.6	6.402	1.111E-02	.3649	1.345E-02	.4415	1.233E-02	.4049	.8500
81	523.7	4.636	6.024E-03	.1980	7.249E-03	.2387	6.464E-03	.2196	.8500
82	527.4	3.073	3.966E-03	.1302	4.775E-03	.1568	4.415E-03	.1450	.8500
83	520.8	6.048	7.938E-03	.2607	9.590E-03	.3149	8.793E-03	.2487	.8500
84	520.3	6.037	7.924E-03	.2602	9.573E-03	.3146	8.747E-03	.2495	.8500
85	529.3	3.279	4.234E-03	.1392	5.105E-03	.1476	4.848E-03	.1625	.9500

AEDC (AR, INC.), ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A
VA352-210A

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AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP 16 CONFIG MODEL MACH NO 7.94 208.2 1248 ALPHA-MODEL ALPHA-SECTOR 5.08 ALPHA-PREBEND 30.00 ROLL MODEL 180 YAW 0

Y-TAF (DEG R)	P-INP (PSIA)	Q-INP (PSIA)	V-INP (FT/SEC)	HQU-INP (SLUGS/FT ³)	MU-INP (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FH (H=.0175FI) (R=.0175FI) POSITION	STFH	2Y/B
91.7	.022	.588	3726	2.048E-05	7.385E-08	1.033F 06	2.424E-02	4.011E-02	1
GAGE	TW	GDOT	H(TO)	H(TO)/HREF	H(.5TO)	HREF H(TAW)	H(TAW)/HREF	X/C	
52	518.5	1.378	1.862E-03	.0768	2.240E-03	.0924	2.177E-03	.0848	.2500
53	519.8	1.067	1.444E-03	.0596	1.738E-03	.0717	1.712E-03	.0706	.2500
54	512.6	.740	1.005E-03	.0415	1.211E-03	.0499	1.192E-03	.0492	.2500
55	516.1	.488	6.871E-04	.0275	8.041E-04	.0332	7.930E-04	.0327	.2500
56	519.8	.570	7.819E-04	.0323	9.436E-04	.0389	9.405E-04	.0388	.2500
57	520.9	.476	6.537E-04	.0270	7.491E-04	.0325	7.492E-04	.0326	.2500
58	525.5	3.624	5.014E-03	.2068	6.061E-03	2.500	5.762E-03	.2377	.4000
59	521.1	2.247	3.090E-03	.1274	3.730E-03	1.539	3.696E-03	.1483	.4000
60	519.9	1.488	2.043E-03	.0843	2.465E-03	.1017	2.390E-03	.0986	.4000
61	521.3	1.254	1.725E-03	.0711	2.082E-03	.0859	2.024E-03	.0837	.4000
62	523.7	.955	1.318E-03	.0544	1.592E-03	.0657	1.565E-03	.0646	.4000
63	523.9	.899	1.241E-03	.0512	1.498E-03	.0618	1.484E-03	.0612	.4000
64	522.6	.525	7.234E-04	.0298	8.737E-04	.0360	8.897E-04	.0367	.4000
65	527.0	2.140	2.967E-03	.1224	3.588E-03	.1480	3.497E-03	.1443	.5000
66	526.1	1.373	1.901E-03	.0784	2.298E-03	.0948	2.235E-03	.0922	.5000
67	526.7	1.275	1.767E-03	.0729	2.137E-03	.0882	2.111E-03	.0871	.5000
68	524.4	.732	1.012E-03	.0417	1.223E-03	.0504	1.248E-03	.0515	.5000
69	524.3	1.967	2.724E-03	.1124	3.293E-03	.1358	3.203E-03	.1321	.6000
70	525.8	1.102	1.521E-03	.0628	1.938E-03	.0758	1.749E-03	.0738	.6000
71	526.2	1.043	1.443E-03	.0595	1.745E-03	.0720	1.697E-03	.0698	.6000
72	525.6	.905	1.254E-03	.0517	1.516E-03	.0625	1.485E-03	.0613	.6000
73	524.7	.644	9.547E-04	.0396	1.160E-03	.0479	1.165E-03	.0480	.6000
74	537.1	.620	4.562E-04	.0353	1.035E-03	.0427	1.055E-03	.0435	.6000
75	528.1	4.199	5.903E-03	.2435	7.159E-03	.2451	6.947E-03	.2866	.7500
76	529.7	1.356	1.843E-03	.0777	2.278E-03	.0940	2.212E-03	.0912	.7500
77	526.0	1.491	2.074E-03	.0856	2.511E-03	.1036	2.446E-03	.1009	.7500
78	527.8	.696	9.634E-04	.0397	1.165E-03	.0480	1.153E-03	.0475	.7500
79	527.8	.640	1.143E-03	.0492	1.483E-03	.0695	1.470E-03	.0606	.7500
80	543.4	5.529	7.644E-03	.3235	9.531E-03	.3932	9.232E-03	.3808	.8500
81	531.5	1.923	2.641E-03	.1107	3.248E-03	.1340	3.152E-03	.1300	.8500
82	537.7	2.579	3.614E-03	.1491	4.388E-03	.1907	4.266E-03	.1760	.8500
83	540.1	3.732	5.270E-03	.2174	6.398E-03	.2639	6.191E-03	.2554	.9500
84	532.5	1.729	2.315E-03	.0996	2.925E-03	.1207	2.853E-03	.1177	.9500
85	530.0	1.251	1.742E-03	.0718	2.108E-03	.0870	2.143E-03	.0884	.9500

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP	CONFID	MODEL	MACH NO	PO, PSTA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
17	1		7.94	209.4	1242	29.88	.12	30.00	180	0	0
T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (HREF-0175FI)	STFR (HREF-0175FI)	SWITCH (HREF-0175FI)	POSITION	
91.3	.023	.594	37.7	2.071E-05	7.348E-08	1.047E 06	2.429E-02	3.987E-02	1		
GAGE	T _W	COOT	HIT0	H(T0)/HREF	H(.910)	H(.910)/HREF	H(TAW)/HREF	X/L	PHI	2Y/B	
1	512.6	1.942	2.662E-03	.1096	3.208E-03	.1321	2.283E-03	.0940			
4	550.7	8.979	1.299E-02	.5347	1.583E-02	.6518	1.303E-02	.0050		0	
2	539.7	6.247	8.953E-03	.3685	1.088E-02	.4477	9.385E-03	.5364		0	
3	530.5	3.786	5.322E-03	.2191	6.447E-03	.2654	5.815E-03	.3863		0	
6	525.6	2.698	3.763E-03	.1549	4.553E-03	.1874	4.193E-03	.2394		0	
7	521.6	2.198	3.051E-03	.1256	3.687E-03	.1518	3.450E-03	.1726		0	
8	516.9	1.908	2.631E-03	.1083	3.175E-03	.1307	3.001E-03	.1420		0	
10	518.7	1.379	1.882E-03	.0775	2.266E-03	.0933	2.169E-03	.1235		0	
12	514.6	2.317	3.145E-03	.1311	3.841E-03	.1581	3.475E-03	.0893		0	
13	511.4	1.532	2.097E-03	.0863	2.527E-03	.1040	2.418E-03	.1513		0	
16	514.9	1.318	1.788E-03	.0736	2.150E-03	.0845	2.072E-03	.0996		0	
17	518.4	1.658	2.261E-03	.0931	2.721E-03	.1120	2.622E-03	.0853		0	
19	513.4	1.255	1.699E-03	.0700	2.043E-03	.0841	1.966E-03	.1079		0	
20	500.0	1.153	1.568E-03	.0645	1.883E-03	.0775	1.822E-03	.2250		1070	
22	499.1	1.121	1.509E-03	.0621	1.812E-03	.0746	1.756E-03	.2500		0	
23	498.7	1.090	1.467E-03	.0604	1.761E-03	.0725	1.706E-03	.2750		0	
24	511.0	1.589	2.145E-03	.0883	2.577E-03	.1061	2.496E-03	.3000		0	
25	512.6	1.743	2.354E-03	.0971	2.834E-03	.1167	2.745E-03	.3000		0	
26	513.7	1.779	2.410E-03	.0992	2.897E-03	.1193	2.806E-03	.3000		0	
29	499.9	1.050	1.413E-03	.0582	1.696E-03	.0698	1.644E-03	.3250		0	
30	498.6	1.037	1.395E-03	.0574	1.674E-03	.0689	1.622E-03	.3500		0	
31	499.1	.952	1.242E-03	.0528	1.539E-03	.0633	1.491E-03	.3500		0	
32	511.7	1.096	1.441E-03	.0610	1.779E-03	.0732	1.723E-03	.4000		0	
33	512.9	.924	1.253E-03	.0516	1.506E-03	.0620	1.459E-03	.4500		1070	
34	512.9	.909	1.221E-03	.0506	1.474E-03	.0608	1.431E-03	.4500		0	
35	514.6	.921	1.249E-03	.0514	1.501E-03	.0618	1.454E-03	.5000		0	
37	515.3	.905	1.224E-03	.0504	1.477E-03	.0608	1.431E-03	.5500		1070	
38	517.3	.860	1.172E-03	.0482	1.411E-03	.0581	1.366E-03	.5500		0	
39	519.8	.827	1.130E-03	.0465	1.361E-03	.0560	1.314E-03	.6000		0	
40	510.6	.786	1.075E-03	.0443	1.295E-03	.0533	1.254E-03	.6000		0	
41	513.4	.726	9.954E-04	.0410	1.200E-03	.0494	1.162E-03	.6500		1070	
43	515.7	.524	8.594E-04	.0354	1.037E-03	.0427	1.004E-03	.7000		0	
44	517.7	.528	7.287E-04	.0300	8.795E-04	.0367	8.512E-04	.7500		0	
45	518.4	.493	6.672E-04	.0275	8.055E-04	.0332	7.796E-04	.8000		0	
46	518.9	.479	6.620E-04	.0273	7.993E-04	.0329	7.794E-04	.8000		1070	
47	519.3	.456	4.921E-04	.0203	5.942E-04	.0245	5.838E-04	.8500		0	
48	519.9	.350	4.840E-04	.0199	5.846E-04	.0241	5.744E-04	.9000		0	
49	518.9	.250	3.463E-04	.0143	4.181E-04	.0172	4.138E-04	.9000		1070	
50	518.1	.241	3.330E-04	.0137	4.020E-04	.0165	3.994E-04	.9500		0	
51	520.0	.454	6.290E-04	.0259	7.597E-04	.0313	7.555E-04	1.0000		0	
										2140	

AEOCI(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
.....50 INCH HYPERSONIC TUNNEL B
VA352-21BA

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AECLIAHO, INC.) ARNOLD AFS, TENNESSEE.
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21BA

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-TNF (FT/SEC)	RHO-INF (SLUGS/FT ³)	WU-INF (LH/SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H = .0175FT)	STFR	SWITCH (H = .0175FT) POSITION
91.0	.023	1.003	3711	2.096E-05	7.375E-08	1.062E 06	2.439E-02	3.962E-02	1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51																																																																																																																																																																																																																																																																																																															
1	513.5	554.3	543.7	534.4	525.1	515.8	506.5	497.2	487.9	478.6	469.3	460.0	450.7	441.4	432.1	422.8	413.5	404.2	394.9	385.6	376.3	367.0	357.7	348.4	339.1	329.8	320.5	311.2	301.9	292.6	283.3	274.0	264.7	255.4	246.1	236.8	227.5	218.2	208.9	199.6	190.3	181.0	171.7	162.4	153.1	143.8	134.5	125.2	115.9	106.6	97.3	88.0	78.7	69.4	60.1	50.8	41.5	32.2	22.9	13.6	4.3	-5.0	-15.7	-26.4	-37.1	-47.8	-58.5	-69.2	-79.9	-90.6	-101.3	-112.0	-122.7	-133.4	-144.1	-154.8	-165.5	-176.2	-186.9	-197.6	-208.3	-219.0	-229.7	-240.4	-251.1	-261.8	-272.5	-283.2	-293.9	-304.6	-315.3	-326.0	-336.7	-347.4	-358.1	-368.8	-379.5	-390.2	-400.9	-411.6	-422.3	-433.0	-443.7	-454.4	-465.1	-475.8	-486.5	-497.2	-507.9	-518.6	-529.3	-540.0	-550.7	-561.4	-572.1	-582.8	-593.5	-604.2	-614.9	-625.6	-636.3	-647.0	-657.7	-668.4	-679.1	-689.8	-700.5	-711.2	-721.9	-732.6	-743.3	-754.0	-764.7	-775.4	-786.1	-796.8	-807.5	-818.2	-828.9	-839.6	-850.3	-861.0	-871.7	-882.4	-893.1	-903.8	-914.5	-925.2	-935.9	-946.6	-957.3	-968.0	-978.7	-989.4	-1000.1	-1010.8	-1021.5	-1032.2	-1042.9	-1053.6	-1064.3	-1075.0	-1085.7	-1096.4	-1107.1	-1117.8	-1128.5	-1139.2	-1149.9	-1160.6	-1171.3	-1182.0	-1192.7	-1203.4	-1214.1	-1224.8	-1235.5	-1246.2	-1256.9	-1267.6	-1278.3	-1289.0	-1299.7	-1310.4	-1321.1	-1331.8	-1342.5	-1353.2	-1363.9	-1374.6	-1385.3	-1396.0	-1406.7	-1417.4	-1428.1	-1438.8	-1449.5	-1460.2	-1470.9	-1481.6	-1492.3	-1503.0	-1513.7	-1524.4	-1535.1	-1545.8	-1556.5	-1567.2	-1577.9	-1588.6	-1599.3	-1610.0	-1620.7	-1631.4	-1642.1	-1652.8	-1663.5	-1674.2	-1684.9	-1695.6	-1706.3	-1717.0	-1727.7	-1738.4	-1749.1	-1759.8	-1770.5	-1781.2	-1791.9	-1802.6	-1813.3	-1824.0	-1834.7	-1845.4	-1856.1	-1866.8	-1877.5	-1888.2	-1898.9	-1909.6	-1920.3	-1931.0	-1941.7	-1952.4	-1963.1	-1973.8	-1984.5	-1995.2	-2005.9	-2016.6	-2027.3	-2038.0	-2048.7	-2059.4	-2070.1	-2080.8	-2091.5	-2102.2	-2112.9	-2123.6	-2134.3	-2145.0	-2155.7	-2166.4	-2177.1	-2187.8	-2198.5	-2209.2	-2219.9	-2230.6	-2241.3	-2252.0	-2262.7	-2273.4	-2284.1	-2294.8	-2305.5	-2316.2	-2326.9	-2337.6	-2348.3	-2359.0	-2369.7	-2380.4	-2391.1	-2401.8	-2412.5	-2423.2	-2433.9	-2444.6	-2455.3	-2466.0	-2476.7	-2487.4	-2498.1	-2508.8	-2519.5	-2530.2	-2540.9	-2551.6	-2562.3	-2573.0	-2583.7	-2594.4	-2605.1	-2615.8	-2626.5	-2637.2	-2647.9	-2658.6	-2669.3	-2680.0	-2690.7	-2701.4	-2712.1	-2722.8	-2733.5	-2744.2	-2754.9	-2765.6	-2776.3	-2787.0	-2797.7	-2808.4	-2819.1	-2829.8	-2840.5	-2851.2	-2861.9	-2872.6	-2883.3	-2894.0	-2904.7	-2915.4	-2926.1	-2936.8	-2947.5	-2958.2	-2968.9	-2979.6	-2990.3	-3001.0	-3011.7	-3022.4	-3033.1	-3043.8	-3054.5	-3065.2	-3075.9	-3086.6	-3097.3	-3108.0	-3118.7	-3129

11/12/73

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL
VAJ52-21Ba

GROUP										CONFIG		MODEL		HACF NO		PO, PSTA		TO, DFG R		ALPHA-MODEL		ALPHA-SECTOR		ALPHA-PREBEND		ROLL MODEL		YAW	
18										1		7.94		211.3		1238		34.92		-4.92		30.00		180		-0			
T-1AF										P-INF		U-INF		V-INF		HMD-TMF		MU-INF		RE/FT		HREF-FH		STFR		SWITCH			
(DEG)										(PSIA)		(PSIA)		(FT/SEC)		(SLUGS/FT ³)		(LH-SEC/FT ²)		(FT-1)		(H= .0175FT)		(H= .0175FT)		POSITION			
91.0										.23		1.003		3711		2.096F-05		7.325E-04		1.062F 06		2.439E-02		3.942F-02		1			
GAGE										TM		GMMT		H(TO)		H(TO)/HREF		H(1.5TC)/HREF		H(1.5TC)/HREF		H(TAN)/HREF		X/C		2Y/B			
52	504.8	1.465	2.543E-03	1.043	3.059E-03	1.1254	2.410E-03	1.156	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820		
53	518.7	1.699	2.329E-03	1.055	2.805E-03	1.1150	2.424E-03	1.076	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820	2.500	0.820		
54	513.2	1.302	1.492E-03	0.912	1.900E-03	0.738	1.641E-03	0.689	0.470	2.500	0.470	2.500	0.470	2.500	0.470	2.500	0.470	2.500	0.470	2.500	0.470	2.500	0.470	2.500	0.470	2.500	0.470		
55	517.8	1.748	1.053E-03	0.632	1.271E-03	0.521	1.190E-03	0.468	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591		
56	521.4	1.741	1.034E-03	0.624	1.250E-03	0.512	1.184E-03	0.465	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591		
57	521.8	1.771	1.074E-03	0.641	1.301E-03	0.533	1.237E-03	0.480	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591	2.500	0.591		
58	524.6	3.305	4.631E-03	1.899	5.603E-03	2.297	5.032E-03	2.063	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500		
59	522.4	1.352	3.206E-03	1.347	3.674E-03	1.129	3.625E-03	1.486	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400		
60	523.0	1.649	2.306E-03	0.945	2.789E-03	1.143	2.559E-03	1.049	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400	2.500	0.400		
61	525.5	1.439	2.010E-03	0.828	2.443E-03	1.002	2.254E-03	0.924	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300		
62	527.3	1.190	1.674E-03	0.686	2.027E-03	0.831	1.849E-03	0.775	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200		
63	526.0	1.164	1.641E-03	0.673	1.946E-03	0.814	1.866E-03	0.765	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200		
64	521.4	1.753	1.051E-03	0.631	1.270E-03	0.521	1.233E-03	0.506	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900		
65	521.9	2.217	3.138E-03	1.287	3.805E-03	1.560	3.509E-03	1.439	0.174	2.500	0.174	2.500	0.174	2.500	0.174	2.500	0.174	2.500	0.174	2.500	0.174	2.500	0.174	2.500	0.174	2.500	0.174		
66	522.0	1.464	2.073E-03	0.850	2.514E-03	1.031	2.312E-03	0.948	0.484	2.500	0.484	2.500	0.484	2.500	0.484	2.500	0.484	2.500	0.484	2.500	0.484	2.500	0.484	2.500	0.484	2.500	0.484		
67	528.3	1.224	1.723E-03	0.707	2.084E-03	0.856	1.956E-03	0.802	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700		
68	523.4	1.018	1.424E-03	0.584	1.723E-03	0.706	1.674E-03	0.688	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900		
69	526.5	3.207	4.570E-03	1.874	5.549E-03	2.275	5.103E-03	2.092	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200		
70	527.9	2.359	3.362E-03	1.378	4.083E-03	1.674	3.754E-03	1.541	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200	2.500	0.200		
71	527.3	1.419	2.010E-03	0.824	2.438E-03	1.077	2.302E-03	0.927	0.600	2.500	0.600	2.500	0.600	2.500	0.600	2.500	0.600	2.500	0.600	2.500	0.600	2.500	0.600	2.500	0.600	2.500	0.600		
72	527.3	1.003	1.411E-03	0.578	1.708E-03	0.700	1.631E-03	0.669	0.800	2.500	0.800	2.500	0.800	2.500	0.800	2.500	0.800	2.500	0.800	2.500	0.800	2.500	0.800	2.500	0.800	2.500	0.800		
73	525.6	0.950	1.334E-03	0.547	1.614E-03	0.652	1.570E-03	0.644	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900		
74	545.8	4.600	6.644E-03	2.724	8.091E-03	3.318	7.416E-03	3.040	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300		
75	528.7	1.832	2.619E-03	1.074	3.183E-03	1.305	2.921E-03	1.198	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300		
76	527.5	1.637	2.336E-03	0.958	2.837E-03	1.163	2.613E-03	1.071	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500		
77	529.7	1.899	1.269E-03	0.520	1.538E-03	0.630	1.443E-03	0.592	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700	2.500	0.700		
78	529.0	1.136	1.562E-03	0.796	1.941E-03	0.966	1.844E-03	0.773	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900		
79	550.2	5.157	7.496E-03	3.073	9.141E-03	3.748	8.357E-03	3.426	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100		
80	522.2	2.612	3.753E-03	1.539	4.565E-03	1.972	4.185E-03	1.716	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300	2.500	0.300		
81	528.9	2.018	2.886E-03	1.183	3.507E-03	1.438	3.230E-03	1.324	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500	2.500	0.500		
83	545.5	3.317	4.788E-03	1.963	5.805E-03	2.390	5.124E-03	2.184	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100		
84	544.1	3.258	4.693E-03	1.924	5.712E-03	2.342	5.064E-03	2.158	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100	2.500	0.100		
85	535.4	1.589	2.262E-03	0.927	2.745E-03	1.126	2.645E-03	1.070	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900	2.500	0.900		

12/ 5/73

AEDC(ARD,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VA352-218A

GROUP	CONFID	MODEL	MACH NO	PO+PSIA	TO+DEL H	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
32	1		8.00	861.6	1358	30.11	.11	30.00	0	-0
T-INF (DEGR R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION	
98.4	.088	3.954	3888	7.526E-05	7.921E-08	3.694E 06	4.921E-02	2.111E-02	1	
GAGE	TM	COOT	H(TU)	H(TU)/HREF	H(.9TU)	H(.9TU)/HREF	M(TAW)/HREF	X/L	PHI	2Y/B
1	542.8	4.312	5.298E-03	.1075	6.348E-03	.1290	.0886	.0050		0
4	500.9	20.022	2.610E-02	.5304	3.171E-02	.6445	.5310	.0120		0
2	569.2	13.104	1.661E-02	.3376	2.007E-02	.4078	.3558	.0200		0
3	544.5	8.266	1.029E-02	.2090	1.238E-02	.2516	.2306	.0400		0
6	548.1	6.063	7.487E-03	.1521	8.995E-03	.1828	.1714	.0600		0
7	544.5	4.949	6.084E-03	.1236	7.303E-03	.1484	.1415	.0800		0
8	543.6	4.424	5.432E-03	.1104	6.519E-03	.1325	.1275	.1000		0
10	539.6	3.105	3.794E-03	.0771	4.549E-03	.0924	.0901	.1500		0
12	543.5	5.058	6.209E-03	.1262	7.451E-03	.1514	.1475	.1500		0
13	539.1	3.386	4.134E-03	.0840	4.956E-03	.1007	.0982	.1500		0
17	540.0	3.663	4.478E-03	.0910	5.370E-03	.1091	.1070	.2000		0
19	536.9	2.610	3.179E-03	.0646	3.809E-03	.0774	.0758	.2250		0
20	536.3	2.513	3.054E-03	.0621	3.664E-03	.0744	.0733	.2500		0
22	538.4	2.599	3.172E-03	.0644	3.801E-03	.0773	.0762	.2750		0
24	540.3	3.375	4.127E-03	.0839	4.940E-03	.1006	.0992	.3000		0
25	539.2	3.618	4.419E-03	.0898	5.298E-03	.1077	.1061	.3000		0
26	539.6	3.814	4.661E-03	.0947	5.588E-03	.1136	.1120	.3000		0
29	538.5	2.473	3.018E-03	.0613	3.618E-03	.0735	.0725	.3250		0
30	535.2	1.419	1.724E-03	.0350	2.065E-03	.0420	.0414	.3500		0
31	537.5	2.129	2.595E-03	.0527	3.110E-03	.0632	.0623	.4000		0
32	539.5	2.672	3.264E-03	.0663	3.914E-03	.0795	.0784	.4000		0
33	538.4	2.312	2.822E-03	.0573	3.383E-03	.0687	.0678	.4500		0
34	538.1	2.329	2.841E-03	.0577	3.405E-03	.0692	.0682	.5000		0
35	538.3	2.349	2.866E-03	.0582	3.435E-03	.0698	.0688	.5000		0
37	539.1	2.418	2.953E-03	.0600	3.540E-03	.0719	.0709	.5500		0
38	542.7	2.711	3.325E-03	.0676	3.889E-03	.0811	.0799	.6000		0
39	542.5	2.660	3.262E-03	.0663	3.914E-03	.0795	.0784	.6000		0
40	544.6	3.127	3.845E-03	.0781	4.615E-03	.0938	.0924	.6500		0
41	548.4	3.905	4.823E-03	.0980	5.795E-03	.1178	.1161	.7000		0
43	552.2	4.888	6.066E-03	.1233	7.296E-03	.1483	.1461	.7500		0
44	556.9	6.405	7.995E-03	.1625	9.627E-03	.1956	.1928	.8000		0
45	556.8	5.982	7.467E-03	.1517	8.991E-03	.1827	.1801	.8000		0
46	559.4	7.212	9.031E-03	.1835	1.088E-02	.2211	.2197	.8500		0
47	556.8	6.896	8.604E-03	.1749	1.036E-02	.2106	.2095	.9000		0
48	555.8	6.541	8.154E-03	.1657	9.815E-03	.1927	.1915	.9000		0
49	553.6	6.340	7.882E-03	.1602	9.443E-03	.1927	.1915	.9500		0
50	552.1	6.439	7.990E-03	.1624	9.609E-03	.1953	.1941	1.0000		0
51	552.5	6.665	8.274E-03	.1681	9.951E-03	.2022	.2046	1.0000		0

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AEDC(APO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO, PSIA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
32	1		8.00	861.6	1358	30-11	.11	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H= .0175FT)	SIFR (H= .0175FT)	SWITCH POSITION	2Y/B
98.4	.088	3.954	3888	7.526E-05	7.921E-08	3.694E 06	4.921E-02	2.111E-02	1	
GAGE	TW	GOOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C		
52	543.2	3.718	4.562E-03	.0927	5.475E-03	.1113	5.275E-03	.1072	.0820	.2500
53	541.8	3.155	3.866E-03	.0786	4.637E-03	.0942	4.537E-03	.0922	.3020	.2500
54	542.9	2.565	3.147E-03	.0640	3.777E-03	.0767	3.642E-03	.0750	.4470	.2500
55	548.3	3.190	3.940E-03	.0801	4.734E-03	.0962	4.636E-03	.0942	.5910	.2500
56	541.1	6.565	8.238E-03	.1674	9.930E-03	.2018	9.835E-03	.1999	.7360	.2500
57	558.6	7.577	9.478E-03	.1926	1.142E-02	.2320	1.135E-02	.2307	.8810	.2500
58	556.0	6.911	8.617E-03	.1751	1.037E-02	.2108	9.760E-03	.1983	.0500	.4000
59	553.1	5.428	6.743E-03	.1370	8.112E-03	.1648	7.752E-03	.1575	.1000	.4000
60	550.3	4.151	5.139E-03	.1044	6.177E-03	.1255	5.940E-03	.1207	.2000	.4000
61	551.3	3.954	4.902E-03	.0996	5.894E-03	.1198	5.698E-03	.1158	.3000	.4000
62	550.4	5.771	7.235E-03	.1470	8.719E-03	.1772	8.509E-03	.1729	.5600	.4000
63	559.1	6.672	8.351E-03	.1697	1.006E-02	.2045	9.895E-03	.2011	.7000	.4000
64	550.7	5.809	7.195E-03	.1462	8.650E-03	.1758	8.761E-03	.1780	.9000	.4000
65	558.3	5.607	7.012E-03	.1425	8.447E-03	.1716	8.168E-03	.1660	.1760	.5000
66	550.3	14.415	1.854E-02	.3767	2.246E-02	.4563	2.163E-02	.4396	.4840	.5000
67	558.2	11.808	1.495E-02	.3038	1.806E-02	.3669	1.771E-02	.3599	.7000	.5000
68	553.0	7.167	8.902E-03	.1809	1.071E-02	.2176	1.047E-02	.2209	.9000	.6000
69	557.5	6.343	7.923E-03	.1610	9.542E-03	.1939	9.207E-03	.1871	.1000	.6000
70	559.3	5.694	7.130E-03	.1449	8.590E-03	.1746	8.295E-03	.1686	.2000	.6000
71	560.2	5.959	7.470E-03	.1518	9.002E-03	.1829	8.663E-03	.1760	.4300	.6000
72	543.4	10.903	1.372E-02	.2788	1.655E-02	.3363	1.609E-02	.3270	.6000	.6000
73	558.9	5.028	1.130E-02	.2296	1.361E-02	.2766	1.359E-02	.2761	.8000	.6000
74	540.8	1.256	9.016E-03	.1832	1.085E-02	.2204	1.100E-02	.2236	.9000	.6000
75	552.4	13.941	1.794E-02	.3645	2.173E-02	.4417	2.090E-02	.4247	.1000	.7500
76	574.2	4.224	5.244E-03	.1066	6.307E-03	.1242	6.077E-03	.1235	.3000	.7500
77	559.2	14.168	1.808E-02	.3673	2.186E-02	.4443	2.111E-02	.4289	.5000	.7500
78	555.9	9.855	1.234E-02	.2507	1.486E-02	.3021	1.461E-02	.2969	.7000	.7500
79	580.3	15.476	1.990E-02	.2257	1.337E-02	.3021	1.355E-02	.2753	.9000	.7500
80	541.2	16.600	2.137E-02	.4044	2.411E-02	.4999	2.315E-02	.4704	.1000	.8500
81	577.9	16.739	2.146E-02	.4342	2.590E-02	.5263	2.490E-02	.5059	.3000	.8500
83	566.0	11.077	1.399E-02	.4360	2.598E-02	.5279	2.509E-02	.5098	.5000	.8500
84	542.0	10.426	1.310E-02	.2662	1.579E-02	.3209	1.620E-02	.3292	.1000	.9500
85	663.7	-2.496	-3.595E-03	-.0730	-4.469E-03	-.0908	-4.527E-03	-.0920	.5000	.9500

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 VA352-21BA

GROUP	CONFIG	MODEL	MACH	NU	PU-PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PHEBEND	ROLL	MODEL	YAW
33	1		8.00		860.4	1350	35.21	5.21	30.00	0	-0	
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	WU-INF (LB-SFC/FT2)	RE/FT (FT-1)	HREF-FH (R=.0175FT)	SIFR (R=.0175FT)	SWITCH POSITION			
97.8	.088	3.94	3877	7.558E-05	7.877E-08	3.721E 06	4.912E-02	2.105E-02	1			
GAGE	TW	GDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/L	PHI			
1	513.8	5.088	6.233E-03	.1269	7.468E-03	.1520	4.931E-03	.0050				
4	594.0	20.848	2.722E-02	.5541	3.304E-02	.6726	2.617E-02	.0120				
2	562.3	14.303	1.816E-02	.3697	2.191E-02	.4461	1.844E-02	.0200				
3	548.0	9.471	1.181E-02	.2404	1.420E-02	.2891	1.259E-02	.0400				
6	540.7	7.132	8.813E-03	.1794	1.058E-02	.2153	9.611E-03	.0800				
7	536.7	5.940	7.304E-03	.1487	8.757E-03	.1783	8.101E-03	.0900				
8	534.8	5.315	6.520E-03	.1327	7.814E-03	.1591	7.307E-03	.1000				
10	530.0	3.990	4.866E-03	.0991	5.825E-03	.1186	5.522E-03	.1500				
12	516.1	5.872	7.215E-03	.1469	8.649E-03	.1761	8.145E-03	.1500				
13	529.0	3.672	4.473E-03	.0911	5.353E-03	.1090	5.075E-03	.1500				
17	511.9	4.523	5.529E-03	.1126	6.622E-03	.1348	6.321E-03	.1287				
19	527.7	3.421	4.160E-03	.0847	4.978E-03	.1013	4.746E-03	.2000				
20	527.7	3.326	4.045E-03	.0824	4.840E-03	.0985	4.641E-03	.2250				
22	528.3	3.346	4.072E-03	.0829	4.872E-03	.0952	4.678E-03	.2500				
24	512.7	4.241	5.188E-03	.1056	6.215E-03	.1265	5.965E-03	.2750				
25	533.7	4.493	5.504E-03	.1121	6.595E-03	.1343	6.330E-03	.3000				
26	534.0	4.524	5.544E-03	.1129	6.643E-03	.1352	6.376E-03	.3000				
29	530.7	3.184	3.887E-03	.0791	4.653E-03	.0947	4.467E-03	.3000				
30	527.2	2.139	2.599E-03	.0529	3.109E-03	.0633	2.986E-03	.3250				
31	532.8	2.771	3.391E-03	.0690	4.062E-03	.0827	3.899E-03	.3500				
32	534.6	3.245	3.980E-03	.0810	4.770E-03	.0971	4.578E-03	.4000				
33	516.5	2.961	3.640E-03	.0741	4.364E-03	.0888	4.188E-03	.4500				
34	518.9	3.140	3.871E-03	.0788	4.644E-03	.0945	4.456E-03	.5000				
35	518.2	2.946	3.629E-03	.0739	4.353E-03	.0886	4.177E-03	.5000				
37	542.5	3.392	4.201E-03	.0855	5.044E-03	.1027	4.839E-03	.5000				
38	549.3	4.017	5.017E-03	.1021	6.034E-03	.1228	5.786E-03	.5000				
39	549.4	3.877	4.843E-03	.0986	5.825E-03	.1186	5.586E-03	.6000				
40	555.5	4.817	6.063E-03	.1234	7.304E-03	.1487	7.001E-03	.6000				
41	563.2	6.161	7.831E-03	.1594	9.453E-03	.1925	9.057E-03	.6500				
43	565.8	7.492	9.553E-03	.1945	1.154E-02	.2349	1.105E-02	.7000				
44	568.9	9.186	1.176E-02	.2394	1.422E-02	.2894	1.362E-02	.7500				
45	570.0	9.245	1.185E-02	.2413	1.433E-02	.2918	1.371E-02	.8000				
46	568.6	10.036	1.284E-02	.2615	1.553E-02	.3161	1.501E-02	.8000				
47	563.4	9.079	1.154E-02	.2350	1.393E-02	.2837	1.358E-02	.8500				
48	562.1	8.858	1.124E-02	.2289	1.357E-02	.2762	1.322E-02	.8500				
49	557.8	8.226	1.038E-02	.2114	1.252E-02	.2548	1.230E-02	.9000				
50	556.3	8.105	1.021E-02	.2079	1.230E-02	.2505	1.215E-02	.9500				
51	556.7	8.162	1.029E-02	.2095	1.240E-02	.2524	1.224E-02	1.0000				

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO, PSIA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
33	1		8.00	860.4	1350	35.21	5.21	30.00	0	-0
T-1AF (DEG R)	P-1AF (PSIA)	Q-1AF (PSIA)	V-1AF (FT/SEC)	PHO-1AF (SLUGS/FT3)	MU-1AF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT) (H=.0175FT)	STFR (H=.0175FT) (H=.0175FT)	SWITCH POSITION	2Y/B
97.8	.088	3.948	3877	7.558E-05	7.877E-08	3.721E 06	4.912E-02	2.105E-02	1	
GAGE	TW	COOT	H(TO)	H(TO)/HREF	H(.970)	H(.970)/HREF	H(TAW)	X/C		
52	518.3	4.315	5.316E-03	.1082	6.377E-03	.1298	5.957E-03	.0820		.2500
53	540.8	3.537	4.371E-03	.0890	5.247E-03	.1068	4.941E-03	.3020		.2500
54	548.7	3.370	4.208E-03	.0856	5.058E-03	.1030	4.805E-03	.4470		.2500
55	563.9	5.369	6.830E-03	.1391	8.247E-03	.1679	7.843E-03	.5910		.2500
56	572.8	5.824	1.264E-02	.2573	1.530E-02	.3114	1.473E-02	.7360		.2500
57	565.2	5.392	1.197E-02	.2436	1.445E-02	.2942	1.398E-02	.8810		.2500
58	560.2	6.831	8.648E-03	.1761	1.043E-02	.2124	9.47E-03	.0500		.4000
59	540.5	5.949	7.536E-03	.1534	9.090E-03	.1851	8.415E-03	.1713		.4000
60	578.2	10.684	1.384E-02	.2818	1.678E-02	.3416	1.561E-02	.3177		.4000
61	571.4	6.794	8.726E-03	.1776	1.056E-02	.2149	9.888E-03	.2013		.4000
62	578.4	10.865	1.404E-02	.2867	1.707E-02	.3475	1.615E-02	.5600		.4000
63	573.0	10.732	1.381E-02	.2812	1.672E-02	.3403	1.597E-02	.7000		.4000
64	561.9	8.040	1.025E-02	.2087	1.237E-02	.2518	1.223E-02	.9000		.4000
65	569.9	6.150	7.884E-03	.1605	9.534E-03	.1941	8.937E-03	.1819		.5000
66	586.6	14.244	1.864E-02	.3799	2.267E-02	.4615	2.115E-02	.4307		.5000
82	576.4	11.868	1.534E-02	.3123	1.858E-02	.3784	1.770E-02	.3604		.5000
67	543.0	8.132	1.033E-02	.2103	1.247E-02	.2539	1.236E-02	.2517		.5000
68	570.6	7.689	9.866E-03	.2008	1.193E-02	.2429	1.116E-02	.2271		.6000
69	570.2	6.273	8.044E-03	.1638	9.728E-03	.1981	9.105E-03	.1854		.6000
70	573.7	8.127	1.047E-02	.2131	1.267E-02	.2580	1.181E-02	.2405		.6000
71	574.3	11.918	1.540E-02	.3136	1.866E-02	.3799	1.759E-02	.3582		.6000
72	570.5	10.034	1.287E-02	.2620	1.557E-02	.3169	1.513E-02	.3079		.6000
73	543.9	8.392	1.068E-02	.2173	1.289E-02	.2624	1.277E-02	.2599		.6000
74	572.9	6.627	8.528E-03	.1736	1.032E-02	.2101	9.626E-03	.1960		.7500
75	566.6	4.847	6.188E-03	.1260	7.476E-03	.1522	6.980E-03	.1421		.7500
76	565.7	4.716	6.013E-03	.1224	7.263E-03	.1479	6.805E-03	.1385		.7500
77	555.2	3.587	4.513E-03	.0919	5.436E-03	.1107	5.196E-03	.1058		.7500
78	560.3	6.129	7.762E-03	.1580	9.362E-03	.1906	9.259E-03	.1885		.7500
79	614.5	21.380	2.468E-02	.5839	3.502E-02	.7130	3.249E-02	.6614		.8500
80	574.1	8.665	1.117E-02	.2274	1.352E-02	.2753	1.261E-02	.2566		.8500
81	565.5	5.344	6.812E-03	.1387	8.27E-03	.1675	7.713E-03	.1570		.8500
83	582.2	13.426	1.749E-02	.3560	2.122E-02	.4319	1.970E-02	.4012		.9500
84	581.8	14.329	1.865E-02	.3797	2.263E-02	.4607	2.121E-02	.4318		.9500
85	669.6	1.279	1.879E-03	.0383	2.344E-03	.0477	2.306E-03	.0470		.9500

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AEDCIARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP 34 CONFIG 1 MODEL 8.00 MACH NO 861.6 PU+PSIA TO DEG R 1357 ALPHA-MODEL 25.18 ALPHA-SECTOR -4.82 ALPHA-PREBEND 30.00 HOLL MODEL YAW 0 -0

T-INF (DEG R) 98.3 P-INF (PSIA) .088 Q-INF (PSIA) 3.954 V-INF (FT/SEC) 3887 RHO-INF (SLUGS/FT3) 7.529E-05 MU-INF (LB-SEC/FT2) 7.918E-08 RE/FT (FT-1) 3.697E-06 HREF-FR (R= .0175FT) 4.920E-02 STFR (H= .0175FT) POSITION 2.110E-02 SWITCH 1

GAGE	TW	CDOT	H(TO)	H(TO)/HREF	H(.9TO)	M(.9TO)/HREF	H(TAW)	M(TAW)/HREF	X/L	PHI	2Y/B
1	521.6	3.665	4.387E-03	.0892	5.238E-03	.1065	3.778E-03	.0768	.0050	0	0
4	566.6	16.841	2.384E-02	.4845	2.878E-02	.5849	2.475E-02	.5030	.0120	0	0
2	555.3	12.121	1.493E-02	.3035	1.793E-02	.3644	1.624E-02	.3301	.0200	0	0
3	532.5	7.578	9.191E-03	.1868	1.100E-02	.2236	1.042E-02	.2117	.0400	0	0
6	525.8	5.391	6.486E-03	.1318	7.751E-03	.1575	7.486E-03	.1521	.0600	0	0
7	522.4	4.346	5.207E-03	.1058	6.218E-03	.1264	6.023E-03	.1238	.0800	0	0
8	521.2	3.832	4.585E-03	.0932	5.474E-03	.1113	5.410E-03	.1100	.1000	0	0
10	517.9	2.569	3.062E-03	.0622	3.653E-03	.0742	3.648E-03	.0742	.1500	0	0
12	524.2	4.489	5.390E-03	.1096	6.440E-03	.1309	6.432E-03	.1307	.1500	0	0
13	521.3	3.404	4.073E-03	.0828	4.862E-03	.0988	4.856E-03	.0987	.1500	0	0
17	521.9	3.160	3.784E-03	.0769	4.519E-03	.0918	4.539E-03	.0922	.2000	0	0
19	518.5	2.033	2.424E-03	.0493	2.892E-03	.0588	2.902E-03	.0590	.2250	0	0
20	519.5	1.977	2.360E-03	.0480	2.817E-03	.0573	2.839E-03	.0577	.2500	0	0
22	520.5	1.999	2.390E-03	.0486	2.852E-03	.0580	2.877E-03	.0585	.2750	0	0
24	525.3	2.967	3.567E-03	.0725	4.262E-03	.0966	4.300E-03	.0874	.3000	0	0
25	526.0	3.219	3.874E-03	.0787	4.630E-03	.0941	4.670E-03	.0949	.3000	0	0
26	527.4	3.499	4.217E-03	.0857	5.042E-03	.1025	5.087E-03	.1034	.3000	0	0
29	522.8	1.940	2.325E-03	.0473	2.777E-03	.0564	2.801E-03	.0569	.3250	0	0
30	520.3	1.304	1.559E-03	.0317	1.860E-03	.0378	1.877E-03	.0381	.3500	0	0
31	524.3	1.688	2.078E-03	.0412	2.422E-03	.0492	2.444E-03	.0497	.4000	0	0
32	526.8	2.222	2.676E-03	.0544	3.199E-03	.0650	3.227E-03	.0656	.4000	0	0
33	527.5	1.789	2.157E-03	.0438	2.578E-03	.0524	2.601E-03	.0529	.4500	0	0
34	530.5	1.756	2.124E-03	.0432	2.541E-03	.0517	2.564E-03	.0521	.5000	0	0
35	531.1	1.766	2.138E-03	.0435	2.559E-03	.0520	2.582E-03	.0525	.5000	0	0
37	535.1	1.724	2.097E-03	.0426	2.512E-03	.0511	2.535E-03	.0515	.5500	0	0
38	530.2	1.746	2.137E-03	.0434	2.563E-03	.0521	2.586E-03	.0526	.6000	0	0
39	530.6	1.697	2.079E-03	.0423	2.493E-03	.0507	2.516E-03	.0511	.6000	0	0
40	535.3	1.722	2.122E-03	.0431	2.547E-03	.0518	2.571E-03	.0522	.6500	0	0
41	539.2	1.849	2.289E-03	.0465	2.751E-03	.0559	2.776E-03	.0564	.7000	0	0
43	532.4	2.079	2.583E-03	.0525	3.107E-03	.0632	3.136E-03	.0637	.7500	0	0
44	535.0	2.456	3.062E-03	.0622	3.686E-03	.0749	3.720E-03	.0756	.8000	0	0
45	535.6	2.484	3.099E-03	.0630	3.731E-03	.0758	3.766E-03	.0765	.8000	0	0
46	535.5	2.986	3.726E-03	.0757	4.458E-03	.0912	4.558E-03	.0926	.8500	0	0
47	533.5	3.149	3.920E-03	.0797	4.716E-03	.0959	4.821E-03	.0980	.9000	0	0
48	534.0	3.321	4.136E-03	.0841	4.977E-03	.1012	5.088E-03	.1034	.9000	0	0
49	530.1	3.120	3.866E-03	.0786	4.648E-03	.0945	4.780E-03	.0971	.9500	0	0
50	548.5	3.564	4.408E-03	.0896	5.297E-03	.1077	5.467E-03	.1111	1.0000	0	0
51	552.6	5.044	6.270E-03	.1274	7.543E-03	.1533	7.787E-03	.1583	1.0000	0	0

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
34	1		8.00	861.6	1357	25.18	-4.82	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION	2Y/B
98.3	.088	3.954	3887	7.529E-05	7.918E-08	3.497E 06	4.920E-02	2.110E-02	.1	
GAGE	TW	GDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF H(TAW)	H(TAW)/HREF	X/C		
52	531.2	3.509	4.249E-03	.0864	5.084E-03	.1033	.1022	.0820		.2500
53	544.8	2.723	3.312E-03	.0673	3.967E-03	.0806	.0808	.3020		.2500
54	541.5	1.866	2.288E-03	.0465	2.745E-03	.0558	.0559	.4470		.2500
55	552.1	1.506	1.870E-03	.0380	2.250E-03	.0457	.0459	.5910		.2500
56	561.5	3.605	4.532E-03	.0921	5.464E-03	.1111	.1126	.7360		.2500
57	560.7	5.243	6.584E-03	.1338	7.937E-03	.1613	.1641	.8810		.2500
58	558.7	7.418	9.292E-03	.1889	1.120E-02	.2275	.2202	.0500		.4000
59	555.0	5.064	6.314E-03	.1283	7.600E-03	.1545	.1516	.1000		.4000
60	555.7	3.563	4.447E-03	.0904	5.353E-03	.1088	.1074	.2000		.4000
61	559.2	2.156	3.955E-03	.0804	4.768E-03	.0869	.0961	.3000		.4000
62	578.2	8.702	1.117E-02	.2271	1.353E-02	.2750	.2752	.5600		.4000
63	574.8	8.641	1.105E-02	.2245	1.337E-02	.2717	.2737	.7000		.4000
64	561.2	5.915	7.432E-03	.1511	8.960E-03	.1821	.1883	.9000		.4000
65	565.1	4.953	6.255E-03	.1271	7.548E-03	.1534	.1522	.1760		.5000
66	578.5	6.223	1.056E-02	.2147	1.279E-02	.2600	.2573	.4840		.5000
67	577.1	5.363	1.261E-02	.2440	1.453E-02	.2954	.2970	.7000		.5000
68	560.1	5.387	6.760E-03	.1374	8.148E-03	.1656	.1715	.9000		.5000
69	545.2	3.829	4.836E-03	.0917	5.439E-03	.1106	.1095	.1000		.6000
70	578.5	8.103	1.041E-02	.2115	5.836E-03	.1186	.1176	.2000		.6000
71	579.1	10.389	1.335E-02	.2714	1.618E-02	.2562	.2531	.4300		.6000
72	569.7	7.959	1.011E-02	.2055	1.221E-02	.2482	.3280	.6000		.6000
73	561.9	6.194	7.790E-03	.1583	9.394E-03	.1909	.2534	.8000		.6000
74	579.2	9.860	1.268E-02	.2577	1.536E-02	.3121	.3085	.9000		.6000
75	545.0	1.582	1.639E-02	.3312	1.977E-02	.4019	.3972	.1000		.7500
76	567.8	13.952	1.814E-02	.3687	2.202E-02	.4476	.4437	.3000		.7500
77	566.8	7.804	9.876E-03	.2007	1.192E-02	.2423	.2441	.5000		.7500
78	544.3	7.284	9.189E-03	.1868	1.109E-02	.2253	.2330	.7000		.7500
79	575.4	8.766	1.121E-02	.2279	1.357E-02	.2758	.2722	.9000		.8500
80	578.2	10.086	1.295E-02	.2632	1.568E-02	.3187	.3149	.1000		.8500
81	578.2	11.644	1.495E-02	.3039	1.811E-02	.3680	.3650	.3000		.8500
83	573.1	8.582	1.095E-02	.2225	1.324E-02	.2691	.2653	.5000		.9500
84	561.4	5.141	6.512E-03	.1324	7.852E-03	.1596	.1585	.1000		.9500
85	645.3	-830	-1.200E-03	-.0244	-1.493E-03	-.0303	-.0315	.9000		.9500

AEDC(HQ, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-218A

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP	CONFIG	MODEL	MACH	NU	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
35	1		8.00		862.1	1360	30.21	.21	30.00	0		-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (HREF = .0175FT)	STFH (HREF = .0175FT)	SWITCH POSITION	2Y/B		
92.6	.088	3.556	7.92	7.515E-05	7.937E-08	3.695E 06	4.924E-02	2.113E-02	1			
GAGE	TW	GDOT	M(TO)	M(TO)/HREF	M(.9TO)	M(.9TO)/HREF	M(TAW)	X/C				
52	190.3	6.015	5.142E-03	.1044	5.818E-03	.1182	5.675E-03	.1152		.2500		
53	182.5	5.902	5.012E-03	.1018	5.667E-03	.1151	5.584E-03	.1134		.2500		
54	190.6	4.939	4.223E-03	.0858	4.779E-03	.0971	4.706E-03	.0956		.2500		
55	199.1	5.409	4.659E-03	.0946	5.277E-03	.1072	5.203E-03	.1057		.2500		
56	235.7	8.503	7.563E-03	.1536	8.603E-03	.1747	8.545E-03	.1735		.2500		
57	227.6	10.515	9.285E-03	.1886	1.055E-02	.2143	1.051E-02	.2134		.2500		
58	212.6	10.397	9.061E-03	.1840	1.028E-02	.2088	9.867E-03	.2004		.4000		
59	293.7	8.604	7.440E-03	.1511	8.432E-03	.1712	8.179E-03	.1661		.4000		
60	191.1	6.914	5.915E-03	.1201	6.693E-03	.1359	6.521E-03	.1324		.4000		
61	194.7	7.119	6.109E-03	.1211	6.916E-03	.1405	6.762E-03	.1373		.4000		
62	295.5	8.601	7.450E-03	.1513	8.445E-03	.1715	8.309E-03	.1687		.4000		
63	201.4	5.463	8.168E-03	.1659	9.254E-03	.1879	9.151E-03	.1859		.4000		
64	185.0	8.492	7.228E-03	.1468	8.174E-03	.1660	8.239E-03	.1673		.4000		
65	211.6	9.559	8.324E-03	.1690	9.442E-03	.1918	9.231E-03	.1875		.5000		
66	196.3	8.300	7.133E-03	.1449	8.076E-03	.1640	7.886E-03	.1602		.5000		
67	174.5	7.737	6.527E-03	.1325	7.372E-03	.1474	7.141E-03	.1453		.5000		
68	215.6	11.877	1.038E-02	.2108	1.178E-02	.2392	1.150E-02	.2335		.6000		
69	208.7	9.924	8.620E-03	.1751	9.774E-03	.1985	9.548E-03	.1939		.6000		
70	198.0	8.805	7.577E-03	.1539	8.582E-03	.1743	8.367E-03	.1699		.6000		
71	178.0	7.112	6.017E-03	.1222	6.800E-03	.1381	6.678E-03	.1356		.6000		
72	149.4	5.762	4.840E-03	.0983	5.464E-03	.1110	5.456E-03	.1108		.6000		
73	149.3	6.024	5.059E-03	.1027	5.712E-03	.1160	5.762E-03	.1170		.6000		
74	276.6	27.289	2.519E-02	.5115	2.890E-02	.5950	2.804E-02	.5694		.7500		
75	197.5	8.491	7.304E-03	.1483	8.272E-03	.1680	8.069E-03	.1639		.7500		
76	186.3	7.679	6.543E-03	.1329	7.401E-03	.1503	7.236E-03	.1469		.7500		
77	176.3	6.867	5.802E-03	.1178	6.555E-03	.1331	6.482E-03	.1316		.7500		
78	166.7	6.012	5.038E-03	.1023	5.686E-03	.1155	5.732E-03	.1164		.7500		
79	252.6	22.314	2.015E-02	.4092	2.297E-02	.4465	2.235E-02	.4538		.8500		
80	252.9	23.713	2.142E-02	.4350	2.442E-02	.4914	2.378E-02	.4829		.8500		
81	247.7	23.624	2.124E-02	.4313	2.420E-02	.4914	2.363E-02	.4800		.8500		
83	229.6	16.878	1.493E-02	.3032	1.697E-02	.3447	1.651E-02	.3353		.9500		
84	214.7	16.441	1.435E-02	.2915	1.629E-02	.3308	1.593E-02	.3236		.9500		
85	210.6	16.282	1.416E-02	.2877	1.607E-02	.3263	1.618E-02	.3285		.9500		

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21RA

GROUP 36 CONFIG 1 MODEL 8.00 MACH NO 8.00 PO-PSIA 862.2 TO-DEG R 1356 ALPHA-MODEL 34.81 ALPHA-SECTOR 4.81 ALPHA-PREBEND 30.00 ROLL MODEL 0 YAW -0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H= .0175FT)	STFR (H= .0175FT)	SWITCH POSITION	
98.3	.088	3.957	3886	7.542E-05	7.910E-08	3.705E 06	4.921E-02	2.108E-02	1	
GAGE	TW	QDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)/HREF	X/L	PHI	2Y/B
1	174.2	8.623	7.297E-03	.1483	8.242E-03	.1675	6.183E-03	.0050		0
4	268.5	27.231	2.504E-02	.5088	2.861E-02	.5813	2.441E-02	.0120		0
2	227.5	15.554	1.733E-02	.3521	1.969E-02	.4002	1.755E-02	.0200		0
3	200.1	14.457	1.251E-02	.2541	1.417E-02	.2879	1.310E-02	.0400		0
6	143.9	11.421	9.744E-03	.1980	1.102E-02	.2239	1.036E-02	.0600		0
7	173.7	5.834	8.317E-03	.1690	9.394E-03	.1909	8.938E-03	.0800		0
8	173.6	9.243	7.817E-03	.1589	8.830E-03	.1794	8.461E-03	.1000		0
10	143.2	7.368	6.177E-03	.1255	6.969E-03	.1416	6.739E-03	.1500		0
12	178.4	9.532	8.095E-03	.1645	9.148E-03	.1859	8.842E-03	.1500	30.0000	
13	166.3	6.729	5.856E-03	.1149	6.344E-03	.1297	6.172E-03	.1500	45.5000	
17	176.8	7.181	6.090E-03	.1238	6.881E-03	.1398	6.683E-03	.2000		
19	141.5	6.119	5.123E-03	.1041	5.779E-03	.1174	5.609E-03	.2250		
20	142.7	6.353	5.324E-03	.1082	6.007E-03	.1221	5.851E-03	.2500		
22	166.5	6.065	5.099E-03	.1036	5.755E-03	.1169	5.611E-03	.2750		
24	172.4	6.838	5.777E-03	.1174	6.525E-03	.1326	6.360E-03	.3000	34.0000	
25	177.0	7.150	6.064E-03	.1232	6.852E-03	.1392	6.679E-03	.3000	40.0000	
26	182.3	7.274	6.194E-03	.1259	7.007E-03	.1424	6.829E-03	.3000	45.0000	
29	176.8	5.138	4.357E-03	.0885	4.923E-03	.1000	4.798E-03	.3250		
30	179.0	5.169	4.392E-03	.0892	4.963E-03	.1009	4.838E-03	.3500		
31	174.5	4.824	4.083E-03	.0830	4.612E-03	.0937	4.496E-03	.4000		
32	174.9	5.212	4.412E-03	.0897	4.985E-03	.1013	4.859E-03	.4000	.1070	
33	176.5	4.907	4.161E-03	.0845	4.701E-03	.0955	4.582E-03	.4500		
34	175.0	5.367	4.544E-03	.0923	5.134E-03	.1043	5.004E-03	.5000		
35	173.4	4.919	4.159E-03	.0845	4.698E-03	.0955	4.580E-03	.5000	.1070	
37	145.2	5.345	4.566E-03	.0928	5.144E-03	.1049	5.032E-03	.5500		
38	195.4	6.117	5.270E-03	.1071	5.968E-03	.1213	5.814E-03	.6000		
39	195.9	5.911	5.095E-03	.1035	5.770E-03	.1172	5.621E-03	.6000		
40	208.7	7.204	6.279E-03	.1276	7.121E-03	.1447	6.935E-03	.6500	.1070	
41	224.1	9.106	8.045E-03	.1635	9.140E-03	.1857	8.898E-03	.7000		
43	243.4	10.435	9.379E-03	.1906	1.068E-02	.2170	1.039E-02	.7500		
44	249.2	12.593	1.138E-02	.2312	1.297E-02	.2635	1.261E-02	.8000		
45	257.7	12.543	1.142E-02	.2321	1.303E-02	.2648	1.267E-02	.8000	.1070	
46	254.6	13.893	1.261E-02	.2563	1.439E-02	.2823	1.408E-02	.8500		
47	245.3	13.430	1.209E-02	.2457	1.377E-02	.2799	1.355E-02	.9000		
48	248.9	12.281	1.109E-02	.2254	1.264E-02	.2569	1.244E-02	.9000	.1070	
49	234.8	12.492	1.114E-02	.2264	1.267E-02	.2576	1.254E-02	.9500		
50	224.0	12.365	1.092E-02	.2220	1.241E-02	.2522	1.232E-02	1.0000		
51	231.2	11.960	1.063E-02	.2161	1.209E-02	.2457	1.200E-02	1.0000	.2140	

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AEDC(ARO-INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VA352-218A

GROUP	CONFIG	MODEL	MACH NO	PO-PSIA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
36	1		8.00	862.2	1356	34.81	4.81	30.00	0	-0	
T-INF DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LH-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH		
98.3	.088	3.957	3886	7.542E-05	7.910E-08	3.705E 06	4.921E-02	2.108E-02	1		
GAGE	TW	GDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C	2Y/B		
52	198.8	7.165	6.139E-03	.1247	6.946E-03	.1411	6.655E-03	.1352	.0820		
53	193.0	6.258	5.335E-03	.1084	6.032E-03	.1226	5.846E-03	.1188	.3020		
54	190.8	5.447	4.674E-03	.0950	5.290E-03	.1075	5.123E-03	.1041	.4470		
55	212.2	8.230	7.195E-03	.1462	8.163E-03	.1659	7.912E-03	.1608	.5910		
56	243.9	13.105	1.178E-02	.2395	1.342E-02	.2727	1.311E-02	.2664	.7360		
57	244.2	13.154	1.183E-02	.2404	1.348E-02	.2738	1.320E-02	.2682	.8810		
58	258.5	21.320	1.943E-02	.3948	2.216E-02	.4504	2.081E-02	.4228	.4000		
59	257.2	21.482	1.955E-02	.3973	2.230E-02	.4532	2.118E-02	.4304	.1000		
60	254.1	19.855	1.802E-02	.3662	2.055E-02	.4175	1.961E-02	.3984	.2000		
61	241.4	18.686	1.677E-02	.3407	1.909E-02	.3879	1.830E-02	.3719	.3000		
62	244.4	19.540	1.758E-02	.3572	2.002E-02	.4068	1.934E-02	.3929	.5600		
63	231.5	17.623	1.567E-02	.3185	1.782E-02	.3621	1.732E-02	.3519	.7000		
64	208.2	12.947	1.128E-02	.2292	1.279E-02	.2599	1.271E-02	.2583	.4000		
65	271.1	24.572	2.265E-02	.4603	2.588E-02	.5260	2.480E-02	.5039	.1760		
66	248.4	21.170	1.911E-02	.3884	2.178E-02	.4426	2.085E-02	.4236	.4840		
82	229.4	18.047	1.602E-02	.3255	1.821E-02	.3700	1.767E-02	.3590	.5000		
67	199.9	13.450	1.163E-02	.2364	1.318E-02	.2678	1.312E-02	.2667	.9000		
68	273.5	26.791	2.475E-02	.5029	2.829E-02	.5750	2.706E-02	.5498	.1000		
69	266.2	24.705	2.267E-02	.4606	2.589E-02	.5261	2.478E-02	.5036	.2000		
70	249.6	22.986	2.077E-02	.4222	2.368E-02	.4811	2.262E-02	.4597	.4300		
71	213.1	17.261	1.510E-02	.3069	1.714E-02	.3482	1.653E-02	.3358	.6000		
72	212.9	15.920	1.393E-02	.2830	1.580E-02	.3211	1.533E-02	.3156	.8000		
73	204.5	14.087	1.223E-02	.2486	1.387E-02	.2818	1.340E-02	.2804	.9000		
74	249.3	31.120	2.917E-02	.5928	3.342E-02	.6792	3.189E-02	.6480	.1000		
75	251.4	23.407	2.119E-02	.4306	2.415E-02	.4908	2.309E-02	.4693	.3000		
76	244.8	22.915	2.062E-02	.4190	2.349E-02	.4773	2.251E-02	.4575	.5000		
77	227.1	15.148	1.696E-02	.3447	1.928E-02	.3918	1.873E-02	.3806	.7000		
78	204.1	15.094	1.310E-02	.2663	1.485E-02	.3018	1.476E-02	.3000	.7500		
79	270.4	27.439	2.528E-02	.5137	2.888E-02	.5870	2.755E-02	.5598	.8500		
80	263.5	26.346	2.412E-02	.4901	2.753E-02	.5595	2.630E-02	.5344	.8500		
81	248.5	24.004	2.167E-02	.4404	2.470E-02	.5019	2.368E-02	.4812	.8500		
83	237.8	19.388	1.734E-02	.3523	1.973E-02	.4010	1.843E-02	.3827	.9500		
84	227.7	20.049	1.777E-02	.3611	2.020E-02	.4104	1.940E-02	.3941	.9500		
85	211.5	17.313	1.513E-02	.3074	1.716E-02	.3487	1.703E-02	.3461	.9500		

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP --- CONFIG MODEL MACH NO PO+PSIA TO+DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW
 37 1 8.00 863.6 1354 25.22 -4.78 30.00 0 -0

T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF-FR STFR SWITCH
 (DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R=.0175FT) POSITION
 98.1 .088 3.963 3882 7.567E-05 7.897E-08 3.720E 06 4.924E-02 2.104E-02 1

GAGE	TW	CDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	H(TAW)/HREF	X/L	PHI	2Y/8
1	155.5	6.697	5.588E-03	.1135	6.300E-03	.1279	5.023E-03	.1020	.0050	0	0
4	291.5	24.559	2.228E-02	.4524	2.539E-02	.5157	2.247E-02	.4645	.0120	0	0
2	210.3	17.678	1.546E-02	.3139	1.753E-02	.3551	1.639E-02	.3328	.0200	0	0
3	191.6	15.325	1.051E-02	.2135	1.189E-02	.2414	1.146E-02	.2327	.0400	0	0
6	144.7	8.950	7.526E-03	.1528	8.493E-03	.1725	8.298E-03	.1685	.0600	0	0
7	155.0	7.350	6.130E-03	.1245	6.911E-03	.1404	6.418E-03	.1385	.0800	0	0
8	152.1	6.871	5.717E-03	.1161	6.442E-03	.1308	6.392E-03	.1298	.1000	0	0
10	145.1	5.323	4.403E-03	.0894	4.958E-03	.1007	4.934E-03	.1006	.1500	0	0
12	152.5	7.702	6.464E-03	.1313	7.293E-03	.1481	7.286E-03	.1480	.1500	30.0000	0
13	140.8	6.167	5.168E-03	.1050	5.830E-03	.1184	5.825E-03	.1183	.1500	45.5000	0
17	143.6	5.375	4.515E-03	.0917	5.095E-03	.1035	5.109E-03	.1038	.2000	0	.1070
19	143.6	4.054	3.349E-03	.0680	3.771E-03	.0766	3.778E-03	.0767	.2250	0	0
20	141.3	4.257	3.510E-03	.0713	3.951E-03	.0802	3.971E-03	.0806	.2500	0	0
22	148.8	4.329	3.592E-03	.0729	4.046E-03	.0822	4.069E-03	.0826	.2750	0	0
24	154.5	5.411	4.511E-03	.0916	5.085E-03	.1033	5.114E-03	.1039	.3000	34.0000	0
25	160.2	5.665	4.746E-03	.0964	5.353E-03	.1087	5.383E-03	.1093	.3000	40.0000	0
26	157.1	5.991	5.048E-03	.1025	5.698E-03	.1157	5.731E-03	.1164	.3000	45.0000	0
29	172.4	3.735	3.161E-03	.0642	3.570E-03	.0725	3.590E-03	.0729	.3250	0	0
30	177.2	4.218	3.585E-03	.0728	4.051E-03	.0823	4.074E-03	.0827	.3500	0	0
31	191.1	7.355	6.325E-03	.1285	7.159E-03	.1454	7.201E-03	.1462	.4000	0	0
32	153.4	4.539	3.780E-03	.0768	4.261E-03	.0865	4.245E-03	.0870	.4000	0	.1070
33	224.1	10.404	9.048E-03	.1838	1.026E-02	.2083	1.032E-02	.2095	.4500	0	0
34	199.4	11.943	1.034E-02	.2101	1.172E-02	.2380	1.179E-02	.2394	.5000	0	0
35	144.9	3.826	3.191E-03	.0648	3.597E-03	.0730	3.617E-03	.0735	.5000	0	0
37	203.1	12.223	1.062E-02	.2157	1.204E-02	.2444	1.211E-02	.2459	.5500	0	.1070
38	203.6	12.214	1.062E-02	.2156	1.203E-02	.2444	1.210E-02	.2458	.6000	0	0
39	173.7	4.632	3.924E-03	.0797	4.433E-03	.0900	4.458E-03	.0905	.6000	0	.1070
40	209.8	11.767	1.024E-02	.2089	1.167E-02	.2369	1.173E-02	.2383	.6500	0	0
41	208.1	12.255	1.069E-02	.2172	1.213E-02	.2463	1.220E-02	.2478	.7000	0	0
43	218.1	11.575	1.017E-02	.2066	1.155E-02	.2345	1.161E-02	.2359	.7500	0	0
44	220.3	11.554	1.019E-02	.2070	1.157E-02	.2350	1.164E-02	.2365	.8000	0	0
45	228.4	12.276	1.091E-02	.2215	1.240E-02	.2518	1.247E-02	.2533	.8000	0	.1070
46	216.6	11.817	1.039E-02	.2110	1.179E-02	.2395	1.192E-02	.2421	.8500	0	0
47	210.7	10.178	8.902E-03	.1808	1.010E-02	.2051	1.025E-02	.2081	.9000	0	0
48	212.5	9.289	8.138E-03	.1653	9.233E-03	.1875	9.367E-03	.1902	.9000	0	.1070
49	208.2	8.704	7.596E-03	.1543	8.614E-03	.1749	8.773E-03	.1782	.9500	0	0
50	206.4	8.066	7.028E-03	.1427	7.968E-03	.1618	8.135E-03	.1652	1.0000	0	0
51	212.9	7.791	6.827E-03	.1387	7.746E-03	.1573	7.910E-03	.1606	1.0000	0	.2140

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AEDCI(ARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL A
 VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
37	1		8.00	863.6	1354	25.22	-4.78	30.00	0		-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	SIFR (H=.0175FT)	SWITCH (H=.0175FT) POSITION	2Y/B	
98.1	.088	3.963	3882	7.567E-05	7.897E-06	3.720E 06	4.924E-02	2.104E-02	1		
GAGE	TW	CDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C			
52	175.1	6.090	5.166E-03	.1049	5.836E-03	.1185	5.793E-03	.1176	.0820	.2500	
53	169.9	4.737	4.000E-03	.0812	4.517E-03	.0917	4.523E-03	.0919	.3020	.2500	
54	173.8	3.608	3.057E-03	.0621	3.454E-03	.0701	3.457E-03	.0702	.4470	.2500	
55	174.3	3.685	3.124E-03	.0634	3.529E-03	.0717	3.536E-03	.0718	.5910	.2500	
56	205.4	5.391	4.694E-03	.0953	5.321E-03	.1081	5.368E-03	.1090	.7360	.2500	
57	207.8	6.956	6.068E-03	.1232	6.881E-03	.1397	6.857E-03	.1413	.8810	.2500	
58	241.7	11.068	9.605E-03	.1951	1.088E-02	.2210	1.065E-02	.2163	.0500	.4000	
59	147.0	8.441	7.233E-03	.1469	8.182E-03	.1662	8.084E-03	.1642	.1000	.4000	
60	174.0	6.435	5.453E-03	.1108	6.160E-03	.1251	6.108E-03	.1240	.2000	.4000	
61	169.1	6.282	5.302E-03	.1077	5.985E-03	.1216	5.954E-03	.1209	.3000	.4000	
62	178.9	5.858	4.985E-03	.1012	5.634E-03	.1144	5.635E-03	.1144	.5600	.4000	
63	174.4	6.064	5.141E-03	.1044	5.807E-03	.1179	5.834E-03	.1185	.7000	.4000	
64	164.7	5.285	4.443E-03	.0902	5.014E-03	.1018	5.118E-03	.1039	.9000	.4000	
65	191.7	9.162	7.883E-03	.1601	8.922E-03	.1812	8.877E-03	.1803	.1760	.5000	
66	180.7	6.890	5.872E-03	.1192	6.638E-03	.1348	6.595E-03	.1339	.4840	.5000	
67	176.3	7.517	6.383E-03	.1296	7.212E-03	.1465	7.236E-03	.1469	.7000	.5000	
68	158.1	6.802	5.687E-03	.1155	6.414E-03	.1302	6.554E-03	.1331	.9000	.5000	
69	175.9	8.191	7.023E-03	.1426	7.946E-03	.1614	7.896E-03	.1604	.1000	.6000	
70	174.8	5.364	4.549E-03	.0991	5.515E-03	.1120	5.483E-03	.1113	.2000	.6000	
71	162.1	7.843	6.580E-03	.1336	7.423E-03	.1507	7.411E-03	.1505	.4300	.6000	
72	161.4	6.592	5.527E-03	.1122	6.235E-03	.1266	6.314E-03	.1282	.8000	.6000	
73	161.8	6.367	5.340E-03	.1085	6.024E-03	.1223	6.154E-03	.1250	.9000	.6000	
74	228.9	15.934	1.772E-02	.3598	2.014E-02	.4090	1.998E-02	.4059	.1000	.7500	
75	224.0	15.274	1.706E-02	.3464	1.938E-02	.3936	1.923E-02	.3906	.3000	.7500	
76	229.5	21.342	1.898E-02	.3855	2.158E-02	.4382	2.145E-02	.4357	.5000	.7500	
77	214.3	18.420	1.616E-02	.3282	1.834E-02	.3725	1.842E-02	.3742	.7000	.7500	
78	147.7	13.105	1.124E-02	.2282	1.271E-02	.2582	1.298E-02	.2637	.9000	.7500	
79	202.2	14.939	1.297E-02	.2634	1.470E-02	.2985	1.457E-02	.2960	.1000	.8500	
80	212.0	17.091	1.497E-02	.3039	1.698E-02	.3448	1.685E-02	.3421	.3000	.8500	
81	212.2	18.812	1.648E-02	.3346	1.869E-02	.3796	1.859E-02	.3776	.5000	.8500	
82	206.0	14.909	1.299E-02	.2638	1.472E-02	.2990	1.459E-02	.2963	.1000	.9500	
84	147.2	8.942	7.535E-03	.1530	8.505E-03	.1727	8.467E-03	.1720	.5000	.9500	
85	177.4	12.052	1.024E-02	.2060	1.158E-02	.2351	1.181E-02	.2398	.9000	.9500	

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
.50 INCH HYPERSONIC TUNNEL H
VA352-210A

GROUP	CONFIG	MODEL	MACH	NU	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	AW
38	1		8.00		865.2	1352	25.17	-4.83	30.00	0		-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION			
98.0	.089	3.970	3880	7.590E-05	7.887E-08	3.734E-06	4.927E-02	2.101E-02	1			
GAGE	TW	QDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)/HREF	X/L	PHI	2Y/8		
1	163.9	6.492	5.464E-03	.1109	6.166E-03	.1251	4.910E-03	.0050				
4	258.1	24.130	2.206E-02	.4477	2.517E-02	.5108	2.266E-02	.0120				
2	217.5	17.312	1.526E-02	.3097	1.732E-02	.3516	1.619E-02	.0200				
3	188.9	11.910	1.024E-02	.2078	1.159E-02	.2352	1.117E-02	.0400				
6	172.3	8.753	7.420E-03	.1506	8.380E-03	.1701	8.188E-03	.0600				
7	163.3	7.472	6.286E-03	.1276	7.093E-03	.1440	6.998E-03	.0800				
8	160.9	6.899	5.792E-03	.1176	6.534E-03	.1326	6.483E-03	.1000				
10	152.2	5.344	4.455E-03	.0904	5.020E-03	.1019	5.016E-03	.1500				
12	148.6	7.489	6.328E-03	.1284	7.145E-03	.1450	7.139E-03	.1500				
13	144.9	6.061	5.108E-03	.1036	5.762E-03	.1169	5.757E-03	.1500				
17	167.7	5.303	4.478E-03	.0909	5.055E-03	.1026	5.070E-03	.1029				
19	149.2	4.054	3.371E-03	.0684	3.798E-03	.0771	3.806E-03	.0772				
20	147.9	4.290	3.563E-03	.0723	4.014E-03	.0815	4.034E-03	.0819				
22	152.4	4.253	3.547E-03	.0720	3.997E-03	.0811	4.020E-03	.0816				
24	163.2	5.241	4.409E-03	.0895	4.975E-03	.1010	5.004E-03	.1016				
25	167.3	5.615	4.740E-03	.0962	5.350E-03	.1086	5.382E-03	.1092				
26	172.2	5.926	5.023E-03	.1019	5.673E-03	.1151	5.706E-03	.1158				
29	175.0	3.316	2.817E-03	.0572	3.183E-03	.0646	3.202E-03	.0650				
30	176.6	3.121	2.655E-03	.0539	3.000E-03	.0609	3.018E-03	.0613				
31	175.7	3.343	2.842E-03	.0577	3.211E-03	.0652	3.230E-03	.0656				
32	172.0	3.979	3.372E-03	.0684	3.809E-03	.0773	3.831E-03	.0778				
33	175.0	3.292	2.797E-03	.0568	3.160E-03	.0641	3.178E-03	.0645				
34	161.4	3.893	3.270E-03	.0664	3.689E-03	.0749	3.710E-03	.0753				
35	170.5	3.473	2.940E-03	.0597	3.320E-03	.0674	3.339E-03	.0678				
37	164.0	3.788	3.188E-03	.0647	3.598E-03	.0730	3.619E-03	.0735				
38	164.4	3.779	3.182E-03	.0646	3.591E-03	.0729	3.612E-03	.0733				
39	171.0	3.582	3.033E-03	.0616	3.425E-03	.0695	3.445E-03	.0699				
40	172.6	3.806	3.227E-03	.0655	3.645E-03	.0740	3.667E-03	.0744				
41	172.0	4.181	3.543E-03	.0719	4.001E-03	.0812	4.025E-03	.0817				
43	193.9	4.501	3.853E-03	.0782	4.357E-03	.0884	4.383E-03	.0890				
44	198.3	6.102	5.244E-03	.1064	5.933E-03	.1204	5.969E-03	.1211				
45	193.1	4.607	3.976E-03	.0807	4.501E-03	.0913	4.528E-03	.0919				
46	192.9	7.322	6.317E-03	.1282	7.151E-03	.1451	7.227E-03	.1467				
47	194.7	7.332	6.335E-03	.1286	7.173E-03	.1456	7.277E-03	.1477				
48	193.5	4.802	4.145E-03	.0841	4.692E-03	.0952	4.760E-03	.0966				
49	193.2	7.114	6.139E-03	.1246	6.945E-03	.1410	7.077E-03	.1436				
50	197.3	7.599	6.524E-03	.1324	7.381E-03	.1498	7.534E-03	.1529				
51	201.8	6.873	5.976E-03	.1213	6.772E-03	.1374	6.914E-03	.1403				

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO, PSIA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
38	1		8.00	865.2	1352	25.17	-4.83	30.00	0		-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (F/IN/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SFC/FT ²)	RE/FT (FT-1)	HREF-FR (H= .0175FT)	STFR (R= .0175FT)	SWITCH	POSITION	
98.0	.089	3.979	3880	7.590E-05	7.887E-08	3.734E 06	4.927E-02	2.101E-02	1		
GAGE	TW	GDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C	2Y/B		
52	189.5	5.497	4.729E-03	.0960	5.351E-03	.1086	5.312E-03	.0820	.2500		
53	183.9	4.484	3.839E-03	.0779	4.341E-03	.0981	4.348E-03	.0882	.2500		
54	176.9	3.708	3.155E-03	.0640	3.565E-03	.0724	3.569E-03	.0724	.2500		
55	173.1	3.620	3.071E-03	.0623	3.468E-03	.0704	3.476E-03	.0706	.2500		
56	167.7	4.991	4.324E-03	.0878	4.898E-03	.0993	4.942E-03	.1003	.2500		
57	200.0	6.416	5.569E-03	.1130	6.310E-03	.1281	6.380E-03	.1295	.2500		
58	227.8	15.542	1.383E-02	.2806	1.572E-02	.3190	1.538E-02	.3121	.2500		
59	203.0	11.307	9.841E-03	.1997	1.115E-02	.2264	1.102E-02	.2236	.4000		
60	182.2	7.884	6.740E-03	.1368	7.621E-03	.1547	7.557E-03	.1534	.4000		
61	174.4	7.030	5.970E-03	.1212	6.744E-03	.1369	6.710E-03	.1362	.4000		
62	198.0	8.838	7.658E-03	.1554	8.675E-03	.1761	8.679E-03	.1761	.4000		
63	197.6	10.532	9.123E-03	.1852	1.033E-02	.2097	1.038E-02	.2107	.4000		
64	179.0	8.580	7.315E-03	.1485	8.267E-03	.1678	8.442E-03	.1713	.4000		
65	248.6	20.469	1.855E-02	.3765	2.114E-02	.4291	2.103E-02	.4269	.4000		
66	233.1	17.399	1.555E-02	.3156	1.769E-02	.3590	1.757E-02	.3566	.5000		
67	213.3	14.798	1.300E-02	.2638	1.475E-02	.2993	1.480E-02	.3004	.5000		
68	179.6	10.031	8.566E-03	.1737	9.671E-03	.1963	9.688E-03	.2007	.5000		
69	213.4	17.243	1.542E-02	.3129	1.753E-02	.3559	1.742E-02	.3536	.5000		
70	215.0	17.414	1.559E-02	.3164	1.774E-02	.3599	1.763E-02	.3578	.6000		
71	218.9	19.433	1.746E-02	.3543	1.987E-02	.4033	1.971E-02	.4001	.6000		
72	216.5	15.650	1.366E-02	.2773	1.549E-02	.3144	1.547E-02	.3139	.6000		
73	196.1	12.642	1.094E-02	.2220	1.239E-02	.2714	1.255E-02	.2547	.6000		
74	235.5	20.140	1.804E-02	.3661	2.052E-02	.4166	2.037E-02	.4134	.7500		
75	233.1	19.294	1.724E-02	.3500	1.941E-02	.3981	1.947E-02	.3951	.7500		
76	229.9	19.786	1.763E-02	.3579	2.005E-02	.4069	1.994E-02	.4047	.7500		
77	208.5	16.017	1.401E-02	.2843	1.588E-02	.3224	1.596E-02	.3239	.7500		
78	191.1	12.507	1.077E-02	.2187	1.219E-02	.2475	1.246E-02	.2528	.7500		
79	206.8	14.625	1.277E-02	.2592	1.448E-02	.2939	1.436E-02	.2914	.8500		
80	217.9	17.045	1.503E-02	.3050	1.706E-02	.3463	1.693E-02	.3437	.8500		
81	214.3	17.616	1.548E-02	.3143	1.757E-02	.3566	1.748E-02	.3548	.8500		
83	211.6	14.753	1.294E-02	.2626	1.468E-02	.2579	1.454E-02	.2952	.9500		
84	172.6	8.890	7.538E-03	.1530	8.514E-03	.1728	8.477E-03	.1720	.9500		
85	181.9	11.777	1.007E-02	.2043	1.138E-02	.2310	1.161E-02	.2356	.9500		

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-214A

GROUP	CONFIG	MODEL	MACH	NU	WU-PSIA	TU-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PHREBEND	ROLL	MODEL	YAW
39	1		8.00		676.8	1341	30.09	.09	30.00	0		-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H=.0175FT) (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION			
97.1	.069	3.106	3864	5.987E-05	7.821E-08	2.95HE 0.6	4.351E-02	2.363E-02	1			
GAGE	TW	GDOT	H(TU)	H(TU)/HREF	H(.9TU)	H(.5TC)/HREF	H(TAW)	X/L	PHI	2Y/8		
1	144.0	6.691	5.685E-03	.1307	6.416E-03	.1475	4.961F-03	.1140	.0050	0		
4	253.6	23.385	2.150E-02	.4942	2.453E-02	.5638	2.152E-02	.4947	.0120	0		
2	214.4	16.883	1.499E-02	.3444	1.701E-02	.3910	1.554E-02	.3571	.0200	0		
3	187.6	12.011	1.041E-02	.2393	1.178E-02	.2708	1.113E-02	.2558	.0400	0		
6	171.1	8.892	7.601E-03	.1747	8.585E-03	.1973	8.234E-03	.1892	.0600	0		
7	161.8	7.612	6.455E-03	.1484	7.283E-03	.1674	7.062E-03	.1623	.0800	0		
8	159.4	6.981	5.908E-03	.1358	6.644E-03	.1532	6.503F-03	.1495	.1000	0		
10	151.7	5.714	4.805E-03	.1104	5.415E-03	.1245	5.327E-03	.1224	.1500	0		
12	148.9	7.649	6.525E-03	.1500	7.368E-03	.1833	7.246E-03	.1665	.1500	30.0000		
13	141.0	5.756	4.878E-03	.1121	5.503E-03	.1265	5.413F-03	.1244	.1500	45.5000		
17	145.0	5.567	4.734E-03	.1088	5.343E-03	.1228	5.277E-03	.1213	.2000	0		
19	146.5	4.810	4.027E-03	.0925	4.536E-03	.1042	4.477E-03	.1029	.2250	0		
20	146.2	5.170	4.327E-03	.0994	4.874E-03	.1120	4.826E-03	.1109	.2500	0		
22	149.4	5.051	4.230E-03	.0974	4.776E-03	.1094	4.733E-03	.1088	.2750	0		
24	163.9	5.371	4.563E-03	.1114	5.149E-03	.1183	5.102E-03	.1173	.3000	34.0000		
25	168.3	5.683	4.846E-03	.1153	5.472E-03	.1258	5.422F-03	.1246	.3000	40.0000		
26	173.1	5.858	5.016E-03	.1183	5.666E-03	.1302	5.614F-03	.1290	.3000	45.0000		
29	163.8	4.526	3.845E-03	.0984	4.339E-03	.0997	4.299E-03	.0988	.3250	0		
30	159.3	3.769	3.189E-03	.0733	3.597E-03	.0827	3.565E-03	.0819	.3500	0		
31	165.7	4.000	3.403E-03	.0782	3.842E-03	.0883	3.807E-03	.0875	.4000	0		
32	174.0	4.051	3.472E-03	.0798	3.922E-03	.0901	3.886E-03	.0893	.4000	0		
33	170.8	3.949	3.375E-03	.0776	3.812E-03	.0876	3.777E-03	.0868	.4500	.1070		
34	164.8	4.073	3.463E-03	.0796	3.908E-03	.0898	3.873E-03	.0890	.5000	0		
35	173.1	3.601	3.083E-03	.0709	3.483E-03	.0801	3.451E-03	.0793	.5000	.1070		
37	166.2	3.802	3.236E-03	.0744	3.653E-03	.0840	3.620F-03	.0832	.5500	0		
38	164.6	4.140	3.520E-03	.0809	3.972E-03	.0913	3.936E-03	.0905	.6000	.1070		
39	172.1	3.916	3.350E-03	.0770	3.784E-03	.0877	3.750E-03	.0862	.6000	0		
40	148.7	4.170	3.558E-03	.0818	4.017E-03	.0923	3.980E-03	.0915	.6500	0		
41	171.6	4.479	3.830E-03	.0880	4.326E-03	.0994	4.287E-03	.0985	.7000	0		
43	181.6	4.918	4.242E-03	.0975	4.797E-03	.1103	4.753E-03	.1092	.7500	0		
44	194.4	6.299	5.446E-03	.1252	6.161E-03	.1416	6.103F-03	.1403	.8000	.1070		
45	192.8	5.155	4.490E-03	.1032	5.046E-03	.1168	5.036E-03	.1157	.8000	0		
46	190.9	7.096	6.170E-03	.1418	6.958E-03	.1605	6.956E-03	.1599	.8500	0		
47	186.0	7.611	6.589E-03	.1514	7.455E-03	.1713	7.457E-03	.1714	.9000	0		
48	190.8	6.478	5.583E-03	.1283	6.313E-03	.1451	6.314F-03	.1451	.9000	.1070		
49	185.2	7.424	6.423E-03	.1476	7.266E-03	.1670	7.200F-03	.1678	.9500	0		
50	190.9	7.966	6.867E-03	.1578	7.744E-03	.1785	7.623E-03	.1798	1.0000	0		
51	190.9	6.869	5.973E-03	.1373	6.761E-03	.1554	6.613F-03	.1566	1.0000	.2140		

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KAMMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VA352-21BA

GROUP	CONFID	MODEL	MACH	NU	MO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	FULL MODEL	YAW
39	1		8.00		676.8	1341	30.09	.09	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	HE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION		
97.1	.069	3.104	JRA4	5.987E-05	7.821E-08	2.954E 06	4.351E-02	2.363E-02	1		
GAGE	TW	COOT	H(TO)	H(TO)/HREF	H(.STO)	H(.STO)/HREF	H(TAW)	X/C	2Y/B		
52	199.7	5.390	4.682E-03	.1076	5.299E-03	.1218	5.170E-03	.0820	.2500		
53	199.2	4.448	3.862E-03	.0888	4.311E-03	.1004	4.308E-03	.3020	.2500		
54	178.2	3.907	3.360E-03	.0772	3.798E-03	.0873	3.742E-03	.4470	.2500		
55	171.8	3.943	3.373E-03	.0775	3.810E-03	.0876	3.759E-03	.5910	.2500		
56	194.8	5.146	4.490E-03	.1032	5.085E-03	.1169	5.054E-03	.7360	.2500		
57	187.5	6.280	5.445E-03	.1251	6.161E-03	.1416	6.134E-03	.1411	.2500		
58	194.5	5.568	8.345E-03	.1918	9.451E-03	.2172	9.081E-03	.0500	.4000		
59	184.0	7.838	6.774E-03	.1557	7.662E-03	.1761	7.439E-03	.1710	.4000		
60	171.9	6.078	5.199E-03	.1195	5.873E-03	.1350	5.726E-03	.2000	.4000		
61	166.0	5.682	4.835E-03	.1111	5.458E-03	.1254	5.342E-03	.3000	.4000		
62	181.5	5.667	4.888E-03	.1123	5.527E-03	.1270	5.442E-03	.5600	.4000		
63	175.7	6.420	5.509E-03	.1266	6.226E-03	.1431	6.160E-03	.7000	.4000		
64	158.4	5.767	4.877E-03	.1121	5.500E-03	.1264	5.435E-03	.1274	.4000		
65	190.6	6.418	7.318E-03	.1682	8.283E-03	.1904	8.106E-03	.1863	.4000		
66	179.4	6.502	5.598E-03	.1287	6.328E-03	.1454	6.184E-03	.4840	.5000		
67	150.8	5.431	5.145E-03	.1194	5.865E-03	.1348	5.795E-03	.1421	.5000		
68	195.7	10.632	9.284E-03	.2134	5.142E-02	.1182	5.191E-03	.1332	.5000		
69	191.7	8.613	7.494E-03	.1722	1.051E-02	.2417	1.077E-02	.1193	.5000		
70	182.1	7.555	6.519E-03	.1498	8.444E-03	.1950	8.294E-03	.2361	.5000		
71	161.7	5.866	4.974E-03	.1143	5.612E-03	.1494	5.515E-03	.1906	.6000		
72	148.5	4.247	3.562E-03	.0819	4.013E-03	.0922	4.009E-03	.4300	.6000		
73	149.4	4.507	3.783E-03	.0869	4.263E-03	.0980	4.301E-03	.6000	.6000		
74	241.8	21.545	1.960E-02	.4505	2.232E-02	.5131	2.176E-02	.9000	.6000		
75	190.2	7.614	6.559E-03	.1508	7.416E-03	.1704	7.240E-03	.5000	.7500		
76	170.6	6.492	5.547E-03	.1275	6.265E-03	.1440	6.129E-03	.1000	.7500		
77	158.7	5.988	5.065E-03	.1164	5.713E-03	.1313	5.452E-03	.3000	.7500		
78	144.7	4.504	3.765E-03	.0865	4.240E-03	.0974	4.275E-03	.5000	.7500		
79	211.6	15.897	1.408E-02	.3235	1.597E-02	.3671	1.556E-02	.9000	.7500		
80	229.8	20.258	1.823E-02	.4190	2.073E-02	.4765	2.021E-02	.1000	.8500		
81	223.8	15.996	1.790E-02	.4114	2.034E-02	.4675	1.988E-02	.3000	.8500		
83	193.2	11.979	1.044E-02	.2399	1.182E-02	.2716	1.151E-02	.5000	.9500		
84	192.4	14.034	1.222E-02	.2808	1.343E-02	.3179	1.354E-02	.1000	.9500		
85	187.4	13.833	1.199E-02	.2756	1.357E-02	.3119	1.367E-02	.3113	.9500		
								.3141	.9000		

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AEDC(AHO, INC.) ANNOLU AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21BA

GROUP	CONFIG	MODEL	MACH	NU	PO,PSIA	TO,DEG	H	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
40	1		8.00		676.7	1342		33.90	3.90	30.00	0		-0
T-INF (DEG R)	P-INF (PSIA)	O-INF (PSIA)	V-TNF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LH-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H= .0175FT)	SIFR (H= .0175FT)	SWITCH (H= .0175FT) POSITION				
97.3	.069	3.10E	3846	5.980E-05	7.830E-08	2.953E 06	4.352E-02	2.365E-02	1				
GAGE	TW	LOUT	H(TO)	H(TO)/HREF	H(.9TU)	H(.5TC)/HREF	H(TAW)	X/L	PHI	2Y/8			
1	172.3	7.514	6.424E-03	.1476	7.256E-03	.1667	5.473E-03	.1258	.0050				
2	254.7	23.432	2.175E-02	.4998	2.485E-02	.5709	2.131E-02	.4897	.0120				
3	196.5	13.140	1.147E-02	.3579	1.770E-02	.4068	1.545E-02	.3642	.0200				
4	170.4	10.027	8.625E-03	.2636	1.299E-02	.2986	1.206E-02	.2772	.0400				
5	170.4	8.704	7.430E-03	.1942	9.751E-03	.2241	9.203E-03	.2115	.0600				
6	170.4	8.187	6.973E-03	.1707	8.791E-03	.1928	8.014E-03	.1841	.0800				
7	170.4	8.187	6.973E-03	.1602	7.873E-03	.1809	7.572E-03	.1740	.1000				
8	159.6	6.643	5.619E-03	.1291	6.338E-03	.1456	6.150E-03	.1413	.1500				
9	179.3	8.246	7.126E-03	.1637	8.056E-03	.1851	7.812E-03	.1795	.1500				
10	171.4	5.613	4.795E-03	.1102	5.416E-03	.1244	5.253E-03	.1207	.1500				
11	175.7	6.407	5.493E-03	.1262	6.207E-03	.1426	6.048E-03	.1390	.2000				
12	153.1	5.605	4.715E-03	.1083	5.315E-03	.1221	5.177E-03	.1189	.2250				
13	154.0	5.743	4.834E-03	.1111	5.450E-03	.1252	5.327E-03	.1224	.2500				
14	170.7	5.620	4.751E-03	.1092	5.359E-03	.1231	5.242E-03	.1205	.2750				
15	180.2	6.127	5.231E-03	.1202	5.907E-03	.1357	5.778E-03	.1328	.3000				
16	170.3	6.277	5.403E-03	.1242	6.109E-03	.1404	5.973E-03	.1373	.3000				
17	170.3	4.794	4.096E-03	.0941	4.625E-03	.1063	4.524E-03	.1039	.3250				
18	144.6	3.380	2.871E-03	.0660	3.240E-03	.0745	3.169E-03	.0728	.3500				
19	166.9	4.623	3.935E-03	.0904	4.442E-03	.1021	4.344E-03	.0998	.4000				
20	168.3	4.795	4.086E-03	.0939	4.442E-03	.1021	4.344E-03	.0998	.4000				
21	165.8	4.571	3.886E-03	.0893	4.386E-03	.1060	4.512E-03	.1037	.4500				
22	142.4	4.942	4.190E-03	.0863	4.728E-03	.1086	4.625E-03	.1063	.5000				
23	165.4	4.285	3.642E-03	.0837	4.111E-03	.0945	4.021E-03	.0924	.5000				
24	172.7	4.538	3.864E-03	.0888	4.362E-03	.1002	4.267E-03	.0980	.5000				
25	178.0	4.466	3.837E-03	.0882	4.376E-03	.1074	4.573E-03	.1051	.5000				
26	179.4	5.107	4.393E-03	.1009	4.966E-03	.1095	4.241E-03	.0974	.6000				
27	198.7	5.983	5.187E-03	.1141	4.856E-03	.1116	4.856E-03	.1116	.6000				
28	212.2	5.680	8.568E-03	.1192	5.739E-03	.1319	5.739E-03	.1319	.7000				
29	210.9	13.345	1.191E-02	.1969	9.723E-03	.2234	9.501E-03	.2183	.7500				
30	220.1	7.600	6.708E-03	.1541	1.354E-02	.3110	1.322E-02	.3038	.8000				
31	225.3	13.680	1.225E-02	.1541	7.609E-03	.1748	7.438E-03	.1709	.8000				
32	209.3	12.753	1.126E-02	.2815	1.392E-02	.3144	1.368E-02	.3144	.8500				
33	197.1	5.798	8.558E-03	.2587	1.277E-02	.2935	1.262E-02	.2899	.9000				
34	203.4	11.329	9.950E-03	.1966	9.694E-03	.2228	9.577E-03	.2201	.9000				
35	197.9	10.829	9.465E-03	.2286	1.128E-02	.2592	1.120E-02	.2573	.9500				
36	208.4	5.352	8.250E-03	.2175	1.072E-02	.2464	1.068E-02	.2454	1.0000				
37				.1896	9.358E-03	.2150	9.321E-03	.2142	1.0000				
38													
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AEDC(AHO-INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-2111A

GROUP	CONFID	MODEL	MACH NO	POA/STA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
40	1		8.00	676.7	1342	33.90	3.00	30.00	0	-0
T-1/AF (DEG R)	P-1/AF (PSIA)	U-1/AF (PSIA)	V-1/AF (FT/SEC)	RHO-1/AF (SLUGS/FT ³)	MU-1/AF (LN-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H= .0175FT) 4.352E-02	STFR (H= .0175FT) 2.365E-02	SWITCH POSITION 1	2Y/B
97.3	.069	3.105	3866	5.980E-05	7.830E-08	2.953E 06				
GAGE	TW	GDUT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C		
52	190.7	5.909	5.132E-03	.1179	4.809E-03	.1335	5.586E-03	.1284	.0820	.2500
53	182.5	4.986	4.306E-03	.0988	4.863E-03	.1117	4.729E-03	.1087	.3020	.2500
54	194.4	4.381	3.785E-03	.0870	4.281E-03	.0984	4.160E-03	.0956	.4470	.2500
55	189.6	4.949	4.294E-03	.0987	4.860E-03	.1117	4.730E-03	.1087	.5910	.2500
56	207.6	7.441	6.560E-03	.1507	7.440E-03	.1710	7.297E-03	.1677	.7360	.2500
57	203.3	8.919	7.833E-03	.1800	8.879E-03	.2040	8.733E-03	.2007	.8810	.2500
58	201.4	8.887	7.791E-03	.1790	8.830E-03	.2029	8.349E-03	.1918	.0500	.4000
59	194.9	7.576	6.605E-03	.1518	7.480E-03	.1719	7.152E-03	.1643	.1000	.4000
60	188.8	6.305	5.468E-03	.1256	6.188E-03	.1422	5.943E-03	.1366	.2000	.4000
61	181.8	6.458	5.566E-03	.1279	6.294E-03	.1466	6.071E-03	.1395	.3000	.4000
62	187.3	7.416	6.423E-03	.1476	7.268E-03	.1470	7.057E-03	.1622	.5000	.4000
63	188.2	7.829	6.785E-03	.1559	7.678E-03	.1764	7.495E-03	.1722	.7000	.4000
64	172.0	8.183	6.994E-03	.1607	7.900E-03	.1915	7.766E-03	.1810	.9000	.4000
65	200.1	6.066	7.064E-03	.1623	8.004E-03	.1839	7.718E-03	.1773	.1740	.5000
66	182.8	7.580	6.539E-03	.1503	7.395E-03	.1699	7.123E-03	.1637	.4840	.5000
67	171.0	7.219	6.219E-03	.1429	7.032E-03	.1616	6.855E-03	.1575	.7000	.5000
68	208.5	7.403	6.322E-03	.1453	7.140E-03	.1641	7.131E-03	.1639	.9000	.5000
69	198.0	11.078	9.774E-03	.2246	1.109E-02	.2547	1.067E-02	.2452	.1000	.6000
70	184.2	5.360	8.182E-03	.1880	9.270E-03	.2130	8.930E-03	.2052	.2000	.6000
71	169.6	8.469	7.315E-03	.1681	8.274E-03	.1901	7.956E-03	.1828	.4300	.6000
72	169.0	7.592	6.476E-03	.1488	7.313E-03	.1680	7.087E-03	.1628	.6000	.6000
73	165.9	6.212	5.206E-03	.1217	5.980E-03	.1374	5.900E-03	.1356	.8000	.6000
74	219.4	13.082	6.012E-03	.1381	6.787E-03	.1559	6.774E-03	.1556	.9000	.6000
75	185.4	8.286	7.165E-03	.2678	1.324E-02	.3041	1.271E-02	.2922	.1000	.7500
76	177.5	7.193	6.177E-03	.1646	8.104E-03	.1862	7.797E-03	.1792	.3000	.7500
77	170.8	5.996	5.119E-03	.1419	6.982E-03	.1604	6.734E-03	.1547	.5000	.7500
78	161.9	5.954	5.045E-03	.1159	5.782E-03	.1329	5.645E-03	.1297	.7000	.7500
79	259.9	23.315	2.155E-02	.6951	5.693E-03	.1364	5.677E-03	.1304	.9000	.7500
80	203.1	11.264	9.891E-03	.2273	2.460E-02	.5452	2.356E-02	.5413	.1000	.8500
81	183.2	8.320	7.180E-03	.1650	8.120E-03	.2576	1.078E-02	.2476	.3000	.8500
83	223.9	16.290	1.457E-02	.3348	1.656E-02	.3904	1.633E-03	.1800	.5000	.8500
84	220.8	18.149	1.619E-02	.3720	1.656E-02	.3904	1.587E-02	.3647	.1000	.9500
85	206.9	15.834	1.395E-02	.3205	1.838E-02	.4225	1.773E-02	.4074	.5000	.9500
					1.582E-02	.3635	1.575E-02	.3619	.9000	

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21HA.

GROUP	CONFIG	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW	
41	1		8.00	677.8	1342	25.15	-4.85	30.00	0		-0	
T-1NF (DEG R)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT3)	MU-1NF (LH-SEC/FT2)	RE/FT (FT-1)				STFR (R=.0175FT)	SWITCH POSITION	
97.3	.069	3.110	3866	5.988E-05	7.832E-08	2.956E 06				4.356E-02	1	
GAGE	TW	COOT	H1(T)	H1(TO)/HREF	H(.9T0)	H(.9TC)/HREF	H(TAW)			X/L	PHI	2Y/8
1	158.8	5.844	4.939E-03	.1134	5.571E-03	.1279	4.440E-03			.1019	.0050	
4	242.3	21.834	1.985E-02	.4558	2.261E-02	.5192	2.039E-02			.4681	.0120	
2	203.9	15.739	1.383E-02	.3175	1.568E-02	.3599	1.466E-02			.3366	.0200	
3	176.9	11.285	9.886E-03	.2224	1.045E-02	.2513	1.056E-02			.2423	.0400	
6	143.4	8.044	6.825E-03	.1567	7.702E-03	.1768	7.527E-03			.1728	.0600	
7	154.6	6.783	5.712E-03	.1311	6.440E-03	.1479	6.355E-03			.1459	.0800	
8	149.1	6.454	5.410E-03	.1242	6.096E-03	.1399	6.050E-03			.1389	.1000	
10	139.6	4.994	4.533E-03	.0953	4.675E-03	.1073	4.672E-03			.1072	.1500	
12	148.7	6.370	5.429E-03	.1246	6.130E-03	.1407	6.126E-03			.1406	.1500	
13	172.8	4.909	4.199E-03	.0964	4.743E-03	.1089	4.740E-03			.1088	.1500	
17	142.4	5.109	4.331E-03	.0994	4.887E-03	.1122	4.902E-03			.1125	.2000	
19	142.4	3.534	2.946E-03	.0676	3.317E-03	.0761	3.324E-03			.0763	.2250	
20	142.7	3.754	3.130E-03	.0719	3.524E-03	.0809	3.542E-03			.0813	.2500	
22	147.8	3.708	3.105E-03	.0713	3.498E-03	.0803	3.514E-03			.0808	.2750	
24	146.5	5.127	4.324E-03	.0993	4.877E-03	.1119	4.905E-03			.1126	.3000	
25	166.1	5.038	4.244E-03	.0983	4.836E-03	.1110	4.864E-03			.1117	.3000	
26	177.5	5.110	4.388E-03	.1007	4.959E-03	.1138	4.989E-03			.1145	.3000	
29	140.4	3.153	2.668E-03	.0613	3.010E-03	.0691	3.028E-03			.0695	.3250	
30	157.0	2.395	2.021E-03	.0464	2.279E-03	.0523	2.293E-03			.0526	.3500	
31	157.8	3.135	2.647E-03	.0604	2.985E-03	.0685	3.003E-03			.0689	.4000	
32	159.2	3.422	2.893E-03	.0664	3.263E-03	.0749	3.282E-03			.0753	.4000	
33	157.1	3.103	2.619E-03	.0601	2.953E-03	.0678	2.970E-03			.0682	.4500	
34	152.0	3.261	2.740E-03	.0629	3.088E-03	.0709	3.106E-03			.0713	.5000	
35	155.9	3.078	2.595E-03	.0596	2.926E-03	.0672	2.941E-03			.0676	.5000	
37	157.3	3.106	2.622E-03	.0602	2.957E-03	.0679	2.974E-03			.0683	.5500	
38	156.2	3.184	2.685E-03	.0616	3.028E-03	.0695	3.045E-03			.0699	.6000	
39	140.5	3.017	2.554E-03	.0586	2.881E-03	.0661	2.898E-03			.0665	.6000	
40	143.2	3.056	2.593E-03	.0595	2.926E-03	.0672	2.941E-03			.0676	.6500	
41	142.5	3.137	2.659E-03	.0611	3.011E-03	.0689	3.019E-03			.0693	.7000	
43	172.2	3.058	2.614E-03	.0600	2.953E-03	.0678	2.971E-03			.0682	.7500	
44	174.7	2.873	2.462E-03	.0565	2.781E-03	.0638	2.798E-03			.0642	.8000	
45	179.1	2.975	2.554E-03	.0587	2.892E-03	.0644	2.910E-03			.0648	.8000	
46	174.5	2.846	2.438E-03	.0560	2.755E-03	.0632	2.784E-03			.0637	.8500	
47	173.1	2.931	2.508E-03	.0576	2.433E-03	.0650	2.471E-03			.0650	.9000	
48	178.4	2.465	2.119E-03	.0486	2.395E-03	.0550	2.429E-03			.0558	.9000	
49	171.8	2.803	2.395E-03	.0550	2.705E-03	.0621	2.754E-03			.0632	.9500	
50	166.3	3.040	2.586E-03	.0594	2.919E-03	.0670	2.979E-03			.0684	1.0000	
51	147.7	3.851	3.336E-03	.0766	3.775E-03	.0867	3.853E-03			.0885	1.0000	.2140

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AEDC(IARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21HA

GROUP	CONFID	MODEL	MACH NO	PU,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
41	1		8.00	677.8	1342	25.15	-4.85	30.00	0		-0
T-1AF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	UH-SEC/FT ²	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (R=.0175FT) (R=.356E-02)	STFR (R=.0175FT) (R=.356E-02)	SWITCH POSITION 1	
97.3	.069	3.110	3866	5.988E-05	7.832E-08	2.956F 06					
GAGE	TW	LDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.5TO)/HREF	H(TAW)	H(TAW)/HREF	X/C	2Y/B	
52	177.3	5.249	4.524E-03	.1039	5.113E-03	.1174	5.076F-03	.1165	.0820	.2500	
53	172.5	3.946	3.374E-03	.0775	3.811E-03	.0875	3.817F-03	.0876	.3020	.2500	
54	147.5	3.270	2.784E-03	.0639	3.143E-03	.0722	3.146E-03	.0722	.4470	.2500	
55	146.1	3.095	2.632E-03	.0604	2.971E-03	.0682	2.978E-03	.0684	.5910	.2500	
56	144.6	3.361	2.904E-03	.0667	3.285E-03	.0754	3.314F-03	.0761	.7360	.2500	
57	145.1	3.703	3.200E-03	.0735	3.620E-03	.0831	3.640E-03	.0840	.8810	.2500	
58	146.1	10.023	8.746E-03	.2008	9.906E-03	.2274	9.699E-03	.2227	.0500	.4000	
59	144.2	7.425	6.413E-03	.1472	7.254E-03	.1665	7.168E-03	.1646	.1000	.4000	
60	171.9	5.613	4.797E-03	.1101	5.419E-03	.1244	5.374F-03	.1234	.2000	.4000	
61	144.1	5.173	4.392E-03	.1008	4.957E-03	.1138	4.932F-03	.1132	.3000	.4000	
62	147.2	4.445	3.784E-03	.0869	4.272E-03	.0981	4.274E-03	.0981	.5600	.4000	
63	143.6	4.775	4.052E-03	.0930	4.573E-03	.1050	4.594F-03	.1055	.7000	.4000	
64	141.3	3.500	2.964E-03	.0681	3.345E-03	.0768	3.414F-03	.0784	.9000	.4000	
65	135.7	7.712	6.670E-03	.1531	7.545E-03	.1732	7.509F-03	.1724	.1740	.5000	
66	172.6	5.759	4.925E-03	.1131	5.564E-03	.1277	5.530E-03	.1269	.4840	.5000	
67	171.8	5.447	4.654E-03	.1068	5.257E-03	.1207	5.276F-03	.1211	.7000	.5000	
68	159.6	4.266	3.608E-03	.0828	4.069E-03	.0934	4.159F-03	.0955	.9000	.5000	
69	140.1	6.915	5.952E-03	.1366	6.729E-03	.1545	6.688F-03	.1535	.1000	.6000	
70	148.4	5.204	4.434E-03	.1018	5.007E-03	.1149	4.979F-03	.1143	.2000	.6000	
71	146.1	3.967	3.374E-03	.0775	3.808E-03	.0874	3.780E-03	.0868	.4300	.6000	
72	156.2	5.288	4.460E-03	.1024	5.024E-03	.1154	5.021F-03	.1153	.6000	.6000	
73	158.9	3.413	2.885E-03	.0662	3.254E-03	.0747	3.296E-03	.0757	.8000	.6000	
74	159.7	3.594	3.040E-03	.0698	3.424E-03	.0787	3.503E-03	.0804	.9000	.6000	
75	203.0	13.261	1.164E-02	.2673	1.320E-02	.3030	1.310E-02	.3008	.1000	.7500	
76	203.9	13.574	1.193E-02	.2738	1.352E-02	.3104	1.342E-02	.3082	.3000	.7500	
77	198.6	13.459	1.177E-02	.2702	1.334E-02	.3062	1.327E-02	.3045	.5000	.7500	
78	177.7	7.605	6.532E-03	.1500	7.383E-03	.1495	7.416E-03	.1703	.7000	.7500	
79	178.8	6.007	6.884E-03	.1580	7.782E-03	.1786	7.948E-03	.1825	.9000	.7500	
80	201.1	12.855	1.127E-02	.2587	1.277E-02	.2932	1.266E-02	.2907	.1000	.8500	
81	178.3	9.279	7.973E-03	.1830	9.013E-03	.2069	8.947E-03	.2054	.3000	.8500	
82	202.4	15.758	1.363E-02	.3174	1.559E-02	.3598	1.559E-02	.3580	.5000	.8500	
83	204.1	13.367	1.175E-02	.2697	1.332E-02	.3057	1.320E-02	.3030	.1000	.9500	
84	168.5	6.936	5.911E-03	.1357	6.674E-03	.1532	6.645E-03	.1526	.5000	.9500	
85	144.3	9.919	8.568E-03	.1967	9.691E-03	.2225	9.487E-03	.2270	.9000	.9500	

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP	CONFIG	MODEL	MACH	NU	PU-PSIA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	HOLL	MODEL	YAW
42	1		7.99		548.0	1321	30.08	.08	30.00	0		-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (R=.0175FT)	SWITCH			
95.9	.057	2.529	3R35	4.950E-05	7.723E-08	2.457E 06	3.916E-02	2.595E-02	1			
GAGE	TW	COOT	H(10)	H(10)/HREF	H(1.9T0)	H(1.9TC)/HREF	H(TAW)/HREF	X/L	PHI	2Y/8		
1	159.8	6.354	5.472E-03	.1397	6.174E-03	.1577	4.777E-03	.1220	.0050	0		
2	242.1	20.334	1.885E-02	.4813	2.148E-02	.5484	1.486E-02	.4817	.0120	0		
3	205.8	15.049	1.349E-02	.3446	1.531E-02	.3909	1.399E-02	.3572	.0200	0		
4	191.0	10.794	9.468E-03	.2418	1.071E-02	.2735	1.012E-02	.2584	.0400	0		
5	167.1	7.457	6.896E-03	.1761	7.788E-03	.1989	7.470E-03	.1908	.0600	0		
6	159.6	6.898	5.939E-03	.1517	6.702E-03	.1711	6.498E-03	.1659	.0800	0		
7	157.3	6.385	5.486E-03	.1401	6.189E-03	.1580	6.040E-03	.1542	.1000	0		
8	146.9	5.172	4.405E-03	.1125	4.944E-03	.1268	4.833E-03	.1247	.1500	0		
9	168.9	6.649	5.771E-03	.1474	6.519E-03	.1665	6.411E-03	.1637	.1500	0		
10	149.2	4.715	4.093E-03	.1045	4.623E-03	.1181	4.547E-03	.1161	.1500	0		
11	165.5	4.913	4.252E-03	.1086	4.801E-03	.1226	4.741E-03	.1211	.2000	0		
12	141.3	4.154	3.521E-03	.0899	3.965E-03	.1013	3.914E-03	.1000	.2250	.1070		
13	145.5	4.119	3.504E-03	.0895	3.948E-03	.1008	3.909E-03	.0998	.2500	0		
14	151.4	4.030	3.445E-03	.0880	3.894E-03	.0992	3.849E-03	.0983	.2750	0		
15	162.9	4.743	4.096E-03	.1104	4.623E-03	.1181	4.541E-03	.1170	.3000	0		
16	148.8	4.940	4.322E-03	.1122	4.969E-03	.1269	4.923E-03	.1257	.3000	0		
17	178.1	5.023	4.395E-03	.0733	3.243E-03	.0428	3.214E-03	.0821	.3000	0		
18	169.2	3.307	2.871E-03	.0553	2.458E-03	.0624	2.423E-03	.0619	.3500	0		
19	167.4	2.497	2.165E-03	.0770	3.403E-03	.0869	3.373E-03	.0861	.4000	0		
20	163.7	3.489	3.015E-03	.0770	3.403E-03	.0869	3.373E-03	.0861	.4000	0		
21	164.4	3.632	3.141E-03	.0802	3.545E-03	.0905	3.513E-03	.0897	.4000	0		
22	158.0	3.520	3.026E-03	.0773	3.414E-03	.0872	3.383E-03	.0864	.4500	0		
23	149.4	3.777	3.224E-03	.0823	3.633E-03	.0928	3.601E-03	.0920	.5000	0		
24	161.4	3.168	2.932E-03	.0698	3.083E-03	.0787	3.055E-03	.0780	.5000	0		
25	154.4	3.410	2.923E-03	.0746	3.296E-03	.0842	3.267E-03	.0834	.5500	0		
26	156.8	3.521	3.024E-03	.0772	3.412E-03	.0871	3.381E-03	.0863	.6000	0		
27	162.0	3.305	2.851E-03	.0728	3.218E-03	.0822	3.189E-03	.0814	.6000	0		
28	159.9	3.530	3.040E-03	.0776	3.430E-03	.0870	3.399E-03	.0868	.6500	0		
29	160.1	3.554	3.062E-03	.0782	3.455E-03	.0882	3.423E-03	.0874	.7000	0		
30	165.9	3.543	3.067E-03	.0783	3.463E-03	.0884	3.432E-03	.0876	.7500	0		
31	166.6	3.869	3.351E-03	.0856	3.784E-03	.0966	3.750E-03	.0958	.8000	0		
32	177.1	3.621	3.166E-03	.0808	3.579E-03	.0914	3.546E-03	.0905	.8000	0		
33	172.8	4.047	3.525E-03	.0900	3.943E-03	.1017	3.967E-03	.1013	.8500	0		
34	157.3	4.345	3.767E-03	.0902	4.254E-03	.1086	4.255E-03	.1087	.9000	0		
35	163.7	4.310	3.724E-03	.0951	4.204E-03	.1073	4.205E-03	.1074	.9000	0		
36	148.4	4.305	3.735E-03	.0954	4.238E-03	.1077	4.238E-03	.1082	.9500	0		
37	144.2	4.829	4.174E-03	.1066	4.712E-03	.1203	4.744E-03	.1212	1.0000	0		
38	175.3	4.189	3.656E-03	.0934	4.133E-03	.1055	4.164E-03	.1063	1.0000	.2140		

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VA352-218A.

GROUP	CONFIG	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
42	1		7.99	548.0	1321	30.08	.0R	30.00	0	-0
T-REF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LH-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION	
95.9	.057	2.529	3835	4.950E-05	7.723E-08	2.457E 06	3.916E-02	2.594E-02	1	
GAGE	TW	COOT	H(TO)	H(TO)/HREF	H(.9TU)	H(.9TC)/HREF	H(TAW)/HREF	X/C	2Y/B	
52	192.7	4.836	4.248E-03	.1085	4.806E-03	.1227	4.690E-03	.0420	.2500	
53	185.9	3.712	3.271E-03	.0835	3.701E-03	.0945	3.648E-03	.0320	.2500	
54	170.7	2.392	2.949E-03	.0753	3.331E-03	.0851	3.283E-03	.0470	.2500	
55	145.4	3.111	2.692E-03	.0687	3.039E-03	.0776	2.999E-03	.5910	.2500	
56	182.1	3.678	3.229E-03	.0825	3.653E-03	.0933	3.631E-03	.0927	.2500	
57	175.3	3.967	3.463E-03	.0884	3.914E-03	.1000	3.900E-03	.8810	.2500	
58	190.2	8.419	7.445E-03	.1901	8.430E-03	.2153	8.101E-03	.0500	.4000	
59	179.3	7.076	6.198E-03	.1583	7.009E-03	.1790	6.806E-03	.1000	.4000	
60	169.1	5.279	4.583E-03	.1170	5.177E-03	.1222	5.048E-03	.2000	.4000	
61	161.6	4.909	4.234E-03	.1081	4.779E-03	.1220	4.677E-03	.1194	.4000	
62	165.9	4.975	4.306E-03	.1100	4.863E-03	.1242	4.789E-03	.1223	.4000	
63	166.7	4.489	3.889E-03	.0993	4.392E-03	.1121	4.346E-03	.1110	.4000	
64	149.3	4.188	3.574E-03	.0913	4.028E-03	.1029	4.061E-03	.1037	.4000	
65	182.3	1.576	6.553E-03	.1699	7.526E-03	.1922	7.366E-03	.1881	.4000	
66	166.6	6.061	5.250E-03	.1341	5.928E-03	.1514	5.795E-03	.1480	.5000	
82	165.0	4.720	4.083E-03	.1043	4.610E-03	.1177	4.555E-03	.1163	.5000	
67	149.9	4.320	3.689E-03	.0942	4.158E-03	.1062	4.198E-03	.1072	.5000	
68	186.3	5.853	8.843E-03	.2217	9.827E-03	.2510	9.603E-03	.2452	.5000	
69	180.6	7.658	6.715E-03	.1715	7.595E-03	.1940	7.427E-03	.1897	.6000	
70	168.8	6.885	5.976E-03	.1526	6.750E-03	.1724	6.587E-03	.1682	.6000	
71	154.7	5.349	4.821E-03	.1180	5.211E-03	.1331	5.121E-03	.1308	.6000	
72	150.4	3.615	3.084E-03	.0789	3.481E-03	.0949	3.474E-03	.0888	.6000	
73	151.2	3.629	3.103E-03	.0792	3.497E-03	.0993	3.529E-03	.0901	.6000	
74	227.4	18.730	1.713E-02	.4374	1.948E-02	.4975	1.899E-02	.4850	.6000	
75	171.4	6.918	6.017E-03	.1537	6.798E-03	.1736	6.638E-03	.1695	.7500	
76	162.6	5.753	4.966E-03	.1268	5.608E-03	.1431	5.485E-03	.1401	.7500	
77	159.3	4.750	4.089E-03	.1044	4.613E-03	.1178	4.564E-03	.1165	.7500	
78	154.7	3.727	3.195E-03	.0816	3.604E-03	.0921	3.633E-03	.0928	.7500	
79	205.1	12.611	1.130E-02	.2886	1.282E-02	.3273	1.249E-02	.3189	.8500	
80	214.6	16.853	1.523E-02	.3890	1.730E-02	.4417	1.647E-02	.4307	.8500	
81	208.5	17.877	1.607E-02	.4103	1.823E-02	.4656	1.783E-02	.4554	.8500	
83	187.7	10.356	9.138E-03	.2331	1.034E-02	.2641	1.008E-02	.2573	.9500	
84	146.6	11.644	1.026E-02	.2621	1.162E-02	.2967	1.137E-02	.2905	.9500	
85	146.0	11.343	9.994E-03	.2552	1.131E-02	.2888	1.139E-02	.2909	.9500	

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AEDC(AHO-INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PU-PSIA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
43	1		7.99	549.4	1317	35.16	5.16	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SFC/FT2)	ME/FT (FT-1)	HREF-FR (H= .0175FT)	STFH (H= .0175FT)	SWITCH POSITION	
95.6	.057	2.535	3829	4.976E-05	7.701E-08	2.474E 06	3.919E-02	2.584E-02	1	
GAGE	TW	COOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/L	PHI	2Y/B
1	162.5	6.690	5.794E-03	.1479	6.540E-03	.1669	4.904E-03	.1251	.0050	0
2	249.5	21.511	2.015E-02	.5142	2.299E-02	.5465	1.061E-02	.5004	.0120	0
3	212.1	16.047	1.452E-02	.3706	1.649E-02	.4208	1.468E-02	.3746	.0200	0
4	172.4	11.638	1.030E-02	.2628	1.166E-02	.2975	1.077E-02	.2747	.0400	0
5	144.4	9.002	7.864E-03	.2007	8.877E-03	.2268	8.344E-03	.2129	.0600	0
6	121.6	7.881	6.837E-03	.1745	7.719E-03	.1970	7.336E-03	.1872	.0800	0
7	103.3	7.347	6.359E-03	.1623	7.178E-03	.1831	6.870E-03	.1753	.1000	0
8	87.9	5.914	5.082E-03	.1297	5.731E-03	.1462	5.535E-03	.1412	.1500	0
9	77.9	5.315	4.582E-03	.1169	5.169E-03	.1319	4.991E-03	.1274	.1500	0
10	67.9	4.881	4.176E-03	.1066	4.706E-03	.1201	4.563E-03	.1164	.2000	0
11	59.4	4.631	3.81E-03	.1088	4.301E-03	.1226	4.180E-03	.1194	.2500	0
12	51.3	4.969	4.262E-03	.1241	4.888E-03	.1471	4.644E-03	.1364	.3000	0
13	43.3	5.887	5.107E-03	.1303	5.766E-03	.1455	5.552E-03	.1433	.3000	0
14	35.3	6.643	5.049E-03	.1288	5.704E-03	.1455	5.552E-03	.1417	.3000	0
15	27.3	7.400	4.004E-03	.1022	4.519E-03	.1153	4.401E-03	.1123	.3250	0
16	19.3	8.284	2.813E-03	.0918	3.170E-03	.0809	3.088E-03	.0788	.3500	0
17	11.3	9.133	3.560E-03	.0908	4.016E-03	.1025	3.911E-03	.0988	.4000	0
18	3.3	10.000	3.792E-03	.0968	4.277E-03	.1091	4.165E-03	.1063	.4500	0
19	1.3	10.919	3.523E-03	.0899	3.974E-03	.1014	3.870E-03	.0988	.5000	0
20	1.3	11.888	3.603E-03	.0919	4.062E-03	.1036	3.956E-03	.1009	.5000	0
21	1.3	12.857	3.264E-03	.0838	3.703E-03	.0945	3.606E-03	.0920	.5000	0
22	1.3	13.826	3.526E-03	.0900	3.976E-03	.1015	3.873E-03	.0988	.5500	0
23	1.3	14.795	4.217	.0930	4.114E-03	.1050	4.005E-03	.1022	.6000	0
24	1.3	15.764	3.949	.0872	3.856E-03	.0984	3.755E-03	.0958	.6000	0
25	1.3	16.733	3.794E-03	.0968	4.285E-03	.1093	4.172E-03	.1064	.6500	0
26	1.3	17.702	4.590	.1025	4.538E-03	.1158	4.417E-03	.1127	.7000	0
27	1.3	18.671	4.624	.1036	4.593E-03	.1172	4.470E-03	.1141	.7500	0
28	1.3	19.640	4.953	.1036	4.909E-03	.1253	4.778E-03	.1219	.8000	0
29	1.3	20.609	4.748	.1108	4.746E-03	.1211	4.619E-03	.1178	.8000	0
30	1.3	21.578	5.531	.1241	5.499E-03	.1403	5.383E-03	.1374	.8500	0
31	1.3	22.547	5.244E-03	.1334	5.208E-03	.1413	5.143E-03	.1374	.9000	0
32	1.3	23.516	5.239	.1175	5.208E-03	.1329	5.124E-03	.1307	.9000	0
33	1.3	24.485	6.131	.1372	6.080E-03	.1551	6.013E-03	.1534	.9500	0
34	1.3	25.454	6.911	.1542	6.832E-03	.1743	6.778E-03	.1730	1.0000	0
35	1.3	26.423	6.337	.1425	6.320E-03	.1613	6.270E-03	.1600	1.0000	0

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VA352-218A

GROUP	CONFIG	MODEL	MACH	NU	PU,PSIA	TO,DEG R	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
43	1		7.99		549.4	1317	35.16	5.16	30.00	0	-0
T-REF (DEG R)	P-REF (PSIA)	Q-REF (PSIA)	V-REF (FT/SEC)	RHO-REF (SLUGS/FT ³)	WU-REF (LB-SEC/FT ²)	HE/FT (FT-1)	HREF-FT (FT-1)	SIFR (H=.0175FT)	SWITCH (H=.0175FT)	POSITION	
95.4	.057	2.535	3829	4.976E-05	7.701E-08	2.474E 06	3.419E-02	2.549E-02	2.549E-02	1	
GAGE	TM	GDOT	H(10)	H(10)/HREF	H(10)/HREF	H(10)/HREF	H(10)/HREF	H(10)/HREF	X/C	2Y/B	
52	172.6	5.432	4.747E-03	.1211	5.364E-03	.1769	5.135E-03	.1310	.0820	.2500	
53	160.8	5.015	4.334E-03	.1107	4.895E-03	.1249	4.740E-03	.1210	.3020	.2500	
54	163.8	3.905	3.464E-03	.0884	3.911E-03	.0998	3.785E-03	.0966	.4470	.2500	
55	172.4	4.003	3.498E-03	.0892	3.953E-03	.1009	3.830E-03	.0977	.5910	.2500	
56	193.1	5.363	4.730E-03	.1207	5.352E-03	.1366	5.227E-03	.1334	.7340	.2500	
57	181.4	5.661	4.985E-03	.1272	5.639E-03	.1439	5.523E-03	.1409	.8810	.2500	
58	183.7	8.293	7.318E-03	.1867	8.280E-03	.2113	7.792E-03	.1988	.0500	.4000	
59	179.2	7.144	6.279E-03	.1602	7.101E-03	.1812	6.758E-03	.1724	.1000	.4000	
60	177.4	5.814	5.102E-03	.1302	5.768E-03	.1472	5.514E-03	.1407	.2000	.4000	
61	171.4	5.764	5.031E-03	.1284	5.695E-03	.1451	5.457E-03	.1393	.3000	.4000	
62	169.9	5.437	4.739E-03	.1209	5.354E-03	.1266	5.176E-03	.1321	.5600	.4000	
63	168.3	5.713	4.974E-03	.1249	5.618E-03	.1433	5.461E-03	.1393	.7000	.4000	
64	159.2	5.082	4.390E-03	.1120	4.953E-03	.1264	4.919E-03	.1255	.9000	.4000	
65	186.7	7.270	6.432E-03	.1641	7.280E-03	.1858	6.987E-03	.1783	.1740	.5000	
66	171.8	6.038	5.272E-03	.1345	5.958E-03	.1520	5.711E-03	.1457	.4840	.5000	
82	162.7	5.559	4.816E-03	.1229	5.477E-03	.1387	5.277E-03	.1347	.7000	.5000	
67	154.5	5.337	4.591E-03	.1172	5.178E-03	.1321	5.151E-03	.1314	.9000	.5000	
68	198.1	10.916	9.756E-03	.2490	1.106E-02	.2822	1.059E-02	.2703	.1000	.6000	
69	186.9	8.156	7.217E-03	.1842	8.169E-03	.2045	7.833E-03	.1999	.2000	.6000	
70	193.8	11.204	9.975E-03	.2545	1.130E-02	.2843	1.081E-02	.2757	.4300	.6000	
71	172.8	9.663	8.445E-03	.2155	9.543E-03	.2435	9.202E-03	.2348	.6000	.6000	
72	154.8	5.056	4.350E-03	.1110	4.906E-03	.1252	4.821E-03	.1230	.8000	.6000	
73	155.9	4.857	4.183E-03	.1067	4.719E-03	.1204	4.691E-03	.1197	.9000	.6000	
74	203.7	12.360	1.111E-02	.2833	1.259E-02	.3213	1.204E-02	.3072	.1000	.6000	
75	180.9	7.790	6.857E-03	.1750	7.756E-03	.1979	7.425E-03	.1895	.3000	.7500	
76	174.4	7.119	6.231E-03	.1590	7.043E-03	.1797	6.759E-03	.1725	.5000	.7500	
77	154.0	5.208	4.478E-03	.1143	5.050E-03	.1288	4.909E-03	.1253	.7000	.7500	
78	153.0	5.663	4.865E-03	.1241	5.486E-03	.1400	5.449E-03	.1390	.9000	.7500	
79	232.4	20.135	1.856E-02	.4737	2.113E-02	.5392	2.015E-02	.5142	.1000	.8500	
80	200.3	12.875	1.153E-02	.2942	1.307E-02	.3336	1.250E-02	.3189	.5000	.8500	
81	206.5	15.971	1.438E-02	.3670	1.632E-02	.4164	1.565E-02	.3992	.5000	.8500	
83	205.3	14.352	1.291E-02	.3294	1.465E-02	.3737	1.397E-02	.3566	.1000	.9500	
84	200.3	15.364	1.376E-02	.3511	1.560E-02	.3980	1.497E-02	.3820	.5000	.9500	
85	189.8	12.877	1.142E-02	.2915	1.293E-02	.3300	1.282E-02	.3272	.9000	.9500	

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP 44 CONFIG 1 MODEL 7.99 MACH 548.3 TO-DEG R 1319 ALPHA-MODEL 25.09 ALPHA-SECTOR -4.91 ALPHA-PREBEND 30.00 ROLL MODEL 0 YAW -0

T-1NF (DEG R) 95.8 P-1NF (PSIA) .057 Q-1NF (PSIA) 2.53n V-1NF (FT/SEC) 3832 RHO-1NF (SLUGS/FT3) 4.959E-05 MU-1NF (LB-SEC/FT2) 7.713E-08 HE/FT (FT-1) 2.444E 06 HREF-FR (R= .0175FT) 3.917E-02 STFR (R= .0175FT) POSITION 1

GAGE	TW	CDOT	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF H(TAW)	H(TAW)/HREF	HREF-FR (R= .0175FT) 3.917E-02	STFR (R= .0175FT) POSITION 1	X/L	PMI	2Y/B
1	147.9	4.984	4.256E-03	.1087	4.796E-03	.1224	3.430E-03	.0978	.0050	0		
2	192.4	15.696	1.804E-02	.4606	2.052E-02	.5239	1.453E-02	.4731	.0120	0		
3	165.7	13.920	1.236E-02	.3155	1.400E-02	.3573	1.310E-02	.3345	.0200	0		
6	157.8	5.614	8.365E-03	.2136	9.450E-03	.2413	9.116E-03	.2327	.0400	0		
7	151.7	6.864	5.911E-03	.1509	6.668E-03	.1702	6.519E-03	.1664	.0600	0		
8	149.5	5.819	4.905E-03	.1273	5.620E-03	.1435	5.546E-03	.1416	.0800	0		
10	140.0	5.282	4.516E-03	.1153	5.090E-03	.1300	5.053E-03	.1290	.1000	0		
12	152.3	4.020	3.409E-03	.0870	3.839E-03	.0980	3.837E-03	.0980	.1500	0		
13	147.1	6.133	5.257E-03	.1342	5.927E-03	.1513	5.924E-03	.1512	.1500	0		
17	146.6	5.095	4.348E-03	.1110	4.894E-03	.1251	4.894E-03	.1250	.1500	0		
19	135.5	4.556	3.886E-03	.0992	4.794E-03	.1118	4.792E-03	.1121	.2000	0		
20	144.5	3.145	2.674E-03	.0683	3.009E-03	.0768	3.017E-03	.0770	.2250	0		
22	137.3	3.370	2.845E-03	.0726	3.202E-03	.0817	3.218E-03	.0822	.2500	.1070		
24	145.5	3.324	2.813E-03	.0718	3.167E-03	.0808	3.185E-03	.0813	.2750	0		
25	149.0	4.207	3.585E-03	.0915	4.038E-03	.1031	4.063E-03	.1037	.3000	30.0000		
26	154.6	4.440	3.829E-03	.0977	4.315E-03	.1102	4.341E-03	.1108	.3000	45.5000		
29	146.4	4.749	4.113E-03	.1050	4.638E-03	.1184	4.666E-03	.1191	.3000	0		
30	140.7	1.955	2.423E-03	.0423	2.730E-03	.0497	2.746E-03	.0701	.3250	34.0000		
31	147.6	2.701	2.305E-03	.0589	2.598E-03	.0663	2.614E-03	.0667	.3500	40.0000		
32	146.8	3.016	2.573E-03	.0657	2.900E-03	.0740	2.917E-03	.0745	.4000	45.0000		
33	148.7	2.564	2.191E-03	.0559	2.469E-03	.0630	2.484E-03	.0634	.4500	0		
34	140.2	2.828	2.399E-03	.0613	2.702E-03	.0690	2.718E-03	.0694	.5000	0		
35	142.9	2.688	2.266E-03	.0584	2.575E-03	.0657	2.590E-03	.0661	.5500	0		
37	139.1	2.850	2.416E-03	.0617	2.720E-03	.0694	2.736E-03	.0699	.6000	0		
38	141.2	2.767	2.349E-03	.0600	2.648E-03	.0675	2.661E-03	.0679	.6500	0		
39	142.2	2.790	2.370E-03	.0605	2.670E-03	.0682	2.686E-03	.0686	.7000	0		
40	148.2	2.647	2.261E-03	.0577	2.548E-03	.0650	2.563E-03	.0654	.7500	0		
41	148.0	2.602	2.222E-03	.0567	2.504E-03	.0639	2.519E-03	.0643	.8000	0		
43	156.2	2.484	2.136E-03	.0545	2.410E-03	.0615	2.424E-03	.0619	.8500	0		
44	154.0	2.331	2.001E-03	.0511	2.256E-03	.0576	2.270E-03	.0579	.9000	0		
45	162.0	2.305	2.070E-03	.0528	2.316E-03	.0596	2.331E-03	.0600	.9500	0		
46	157.8	2.108	1.884E-03	.0481	2.126E-03	.0543	2.144E-03	.0548	1.0000	0		
47	159.5	2.036	1.756E-03	.0448	1.981E-03	.0506	2.004E-03	.0513	0	0		
48	163.3	1.773	1.534E-03	.0392	1.732E-03	.0442	1.756E-03	.0448	0	0		
49	142.4	1.745	1.509E-03	.0385	1.703E-03	.0435	1.733E-03	.0443	0	0		
50	157.1	1.777	1.530E-03	.0391	1.726E-03	.0441	1.761E-03	.0450	0	0		
51	168.5	2.361	2.052E-03	.0524	2.318E-03	.0592	2.366E-03	.0604	0	0		

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
44	1		7.99	548.3	1319	25.09	-4.91	30.00	0	-0
T-INF DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SFC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION	
95.8	.057	2.53n	3832	4.959E-05	7.713E-08	2.464F 06	3.917E-02	2.592E-02	1	
GAGE	TW	QOOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TC)/HREF	H(TAW)	X/C	2Y/B	
52	141.3	4.534	3.916E-03	.1000	4.420E-03	.1128	4.349E-03	.0820	.2500	
53	153.8	2.617	3.104E-03	.0792	3.500E-03	.0894	3.506E-03	.3020	.2500	
54	148.1	2.908	2.483E-03	.0634	2.799E-03	.0714	2.802E-03	.4470	.2500	
55	150.6	2.478	2.121E-03	.0542	2.391E-03	.0610	2.397E-03	.5910	.2500	
56	144.9	2.678	2.320E-03	.0592	2.619E-03	.0669	2.643E-03	.7360	.2500	
57	145.2	2.526	2.190E-03	.0559	2.472E-03	.0631	2.499E-03	.8810	.2500	
58	143.0	2.831	2.774E-03	.1985	8.795E-03	.2245	8.615E-03	.0500	.4000	
59	149.9	6.703	5.833E-03	.1489	6.589E-03	.1682	6.514E-03	.1663	.4000	
60	156.0	4.991	4.291E-03	.1096	4.840E-03	.1236	4.802E-03	.1226	.4000	
61	151.3	4.420	3.785E-03	.0966	4.268E-03	.1089	4.247E-03	.1084	.4000	
62	155.6	3.740	3.215E-03	.0821	3.626E-03	.0926	3.628E-03	.0926	.4000	
63	152.9	3.576	3.067E-03	.0783	3.458E-03	.0883	3.475E-03	.0887	.4000	
64	145.6	2.561	2.182E-03	.0557	2.459E-03	.0628	2.510E-03	.0641	.4000	
65	172.0	5.848	5.970E-03	.1524	6.746E-03	.1722	6.715E-03	.1714	.5000	
66	140.3	5.038	4.348E-03	.1110	4.907E-03	.1253	4.878E-03	.1245	.5000	
67	155.1	4.783	4.110E-03	.1044	4.635E-03	.1183	4.652E-03	.1188	.5000	
68	143.1	3.559	3.026E-03	.0773	3.409E-03	.0870	3.443E-03	.0889	.5000	
69	148.4	6.212	5.399E-03	.1378	6.098E-03	.1557	6.062E-03	.1548	.6000	
70	159.3	4.419	3.811E-03	.0973	4.300E-03	.1098	4.277E-03	.1092	.6000	
71	155.7	3.830	3.292E-03	.0840	3.713E-03	.0948	3.687E-03	.0941	.6000	
72	147.7	4.298	3.669E-03	.0937	4.135E-03	.1056	4.129E-03	.1054	.6000	
73	142.2	3.139	2.667E-03	.0681	3.044E-03	.0767	3.042E-03	.0777	.6000	
74	144.9	3.229	2.750E-03	.0702	3.098E-03	.0791	3.165E-03	.0808	.6000	
75	147.9	11.630	1.028E-02	.2625	1.164E-02	.2971	1.156E-02	.2951	.7500	
76	145.9	11.220	9.903E-03	.2528	1.121E-02	.2861	1.113E-02	.2842	.7500	
77	172.6	6.538	7.447E-03	.1901	8.416E-03	.2149	8.373E-03	.2138	.7500	
78	171.4	8.997	7.840E-03	.2001	8.858E-03	.2261	8.899E-03	.2272	.7500	
79	144.3	9.113	7.927E-03	.2024	8.954E-03	.2286	9.145E-03	.2335	.7500	
80	166.2	11.332	9.988E-03	.2550	1.130E-02	.2885	1.121E-02	.2862	.8500	
81	146.5	13.048	6.641E-03	.1695	7.499E-03	.1914	7.446E-03	.1901	.8500	
82	140.6	11.719	1.154E-02	.2946	1.306E-02	.3334	1.300E-02	.3318	.8500	
83	140.6	11.719	1.039E-02	.2652	1.176E-02	.3003	1.166E-02	.2976	.9500	
84	152.7	5.774	4.951E-03	.1264	5.582E-03	.1425	5.560E-03	.1419	.9500	
85	163.5	8.529	7.381E-03	.1884	8.332E-03	.2127	8.499E-03	.2170	.9500	

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP	CONFIG	MODEL	MACH NO	PO, PSTA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PHEBEND	HOLL MODEL	YAW
45	1		7.99	545.4	1323	30.18	.18	30.00	0	-0
T-1NF (DEG R)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT ³)	MU-1NF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (R=.0175FT)	STFR (R=.0175FT) POSITION	PHI	2Y/B
96.1	.056	2.517	3.18	4.918E-05	7.737E-08	2.439E 06	3.908E-02	2.604E-02	1	
GAGE	TW	GDOT	H(10)	H(10)/HREF	H(-9TU)	H(-9TC)/HREF	H(TAW)/HREF	X/L		
1	156.5	6.046	5.183E-03	.1326	5.846E-03	.1496	4.524E-03	.0050		0
4	241.4	20.321	1.879E-02	.4808	2.141E-02	.5478	1.480E-02	.0120		0
2	265.7	14.713	1.317E-02	.3369	1.494E-02	.3222	1.364E-02	.0200		0
3	190.5	10.661	9.331E-03	.2388	1.055E-02	.2700	9.067E-03	.0400		0
6	166.8	7.913	6.845E-03	.1751	7.729E-03	.1978	7.411E-03	.0600		0
7	160.5	6.774	5.828E-03	.1491	6.576E-03	.1483	6.374E-03	.0800		0
8	157.6	6.203	5.323E-03	.1362	6.004E-03	.1536	5.857E-03	.1000		0
10	147.4	5.012	4.263E-03	.1091	4.804E-03	.1229	4.724E-03	.1500		0
12	163.1	6.734	5.806E-03	.1486	6.553E-03	.1677	6.443E-03	.1500		0
13	157.7	4.928	4.229E-03	.1082	4.770E-03	.1221	4.691E-03	.1500		0
17	155.9	5.330	4.567E-03	.1169	5.150E-03	.1318	5.086E-03	.1500		0
19	144.6	3.880	3.292E-03	.0842	3.709E-03	.0949	3.606E-03	.2000		0
20	146.8	3.938	3.348E-03	.0857	3.772E-03	.0965	3.734E-03	.2250		0
22	149.5	3.894	3.318E-03	.0849	3.740E-03	.0957	3.705E-03	.2500		0
24	156.3	4.812	4.125E-03	.1055	4.652E-03	.1190	4.609E-03	.2750		0
25	161.1	5.072	4.322E-03	.1106	4.878E-03	.1248	4.832E-03	.3000		0
26	167.3	5.056	4.375E-03	.1119	4.940E-03	.1264	4.894E-03	.3000		0
29	154.9	3.483	2.981E-03	.0763	3.762E-03	.0860	3.331E-03	.3000		0
30	148.8	2.374	2.021E-03	.0517	2.378E-03	.0583	2.257E-03	.3250		0
31	150.3	3.524	3.005E-03	.0769	3.387E-03	.0867	3.355E-03	.3500		0
32	150.9	3.643	3.108E-03	.0795	3.504E-03	.0897	3.471E-03	.4000		0
33	151.0	3.343	2.877E-03	.0739	3.254E-03	.0833	3.224E-03	.4000		0
34	147.2	3.539	3.010E-03	.0770	3.391E-03	.0868	3.360E-03	.4500		0
35	147.6	3.331	2.834E-03	.0725	3.194E-03	.0817	3.164E-03	.5000		0
37	150.5	3.312	2.825E-03	.0723	3.184E-03	.0815	3.154E-03	.5000		0
38	153.8	3.363	2.876E-03	.0736	3.243E-03	.0830	3.213E-03	.5500		0
39	155.8	3.286	2.815E-03	.0720	3.175E-03	.0812	3.145E-03	.6000		0
40	157.9	3.441	2.954E-03	.0756	3.332E-03	.0853	3.301E-03	.6000		0
41	158.7	3.399	2.919E-03	.0747	3.243E-03	.0843	3.262E-03	.6500		0
43	168.2	3.604	2.947E-03	.0754	3.329E-03	.0843	3.297E-03	.7000		0
44	165.2	3.703	3.198E-03	.0818	3.611E-03	.0924	3.577E-03	.7500		0
45	172.9	3.609	3.139E-03	.0803	3.546E-03	.0907	3.513E-03	.8000		0
46	170.7	3.770	3.272E-03	.0837	3.696E-03	.0946	3.640E-03	.8000		0
47	160.7	4.165	3.602E-03	.0922	4.067E-03	.1041	4.067E-03	.8500		0
48	162.0	4.441	3.825E-03	.0979	4.317E-03	.1105	4.317E-03	.9000		0
49	149.8	4.190	3.633E-03	.0930	4.104E-03	.1050	4.122E-03	.9000		0
50	160.5	4.636	4.009E-03	.1026	4.526E-03	.1158	4.559E-03	.9500		0
51	178.1	5.126	4.477E-03	.1146	5.062E-03	.1295	5.100E-03	1.0000		0
										.2140

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-21UA

GROUP	CONFIG	MODEL	MACH	NU	PO, PSTA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
45	1		7.99		545.4	1323	30.18	.18	30.00	0	-0	
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-ER (H=.0175FT) (H=.0175FT)	STFR (H=.0175FT) (H=.0175FT)	SWITCH POSITION	2Y/B		
96.1	.056	2.517	3.38	4.918E-05	7.737E-08	2.439F 06	3.908E-02	2.604E-02	1			
GAGE	TV	GOOT	H(TO)	H(TO)/HREF	H(-9TO)	H(-5TO)/HREF	H(TAW)	X/C				
52	166.6	4.935	4.267E-03	.1092	4.819E-03	.1233	4.702E-03	.1203	.0820	.2500		
53	160.3	4.217	3.627E-03	.0928	4.092E-03	.1047	4.034E-03	.1032	.3020	.2500		
54	159.4	3.387	2.910E-03	.0745	3.284E-03	.0840	3.235E-03	.0828	.4470	.2500		
55	150.6	3.098	2.665E-03	.0682	3.007E-03	.0769	2.967E-03	.0759	.5910	.2500		
56	178.9	3.693	3.228E-03	.0826	3.650E-03	.0934	3.627E-03	.0928	.7340	.2500		
57	178.4	5.933	5.184E-03	.1326	5.861E-03	.1500	5.838E-03	.1494	.8810	.2500		
58	194.4	6.517	7.480E-03	.1914	8.464E-03	.2166	8.132E-03	.2081	.0500	.4000		
59	174.1	7.076	6.158E-03	.1576	6.960E-03	.1781	6.757E-03	.1729	.1000	.4000		
60	154.0	5.315	4.586E-03	.1173	5.176E-03	.1325	5.046E-03	.1291	.2000	.4000		
61	160.4	4.705	4.125E-03	.1055	4.654E-03	.1191	4.554E-03	.1165	.3000	.4000		
62	149.6	4.364	3.784E-03	.0968	4.274E-03	.1094	4.207E-03	.1077	.5600	.4000		
63	148.3	6.338	5.489E-03	.1404	6.199E-03	.1586	6.132E-03	.1569	.7000	.4000		
64	147.2	7.736	6.643E-03	.1713	7.559E-03	.1934	7.319E-03	.1950	.9000	.4000		
65	176.4	7.635	6.659E-03	.1704	7.528E-03	.1926	7.365E-03	.1885	.1740	.5000		
66	170.1	5.715	4.957E-03	.1268	5.598E-03	.1433	5.470E-03	.1400	.4840	.5000		
67	162.7	4.640	4.016E-03	.1028	4.533E-03	.1160	4.478E-03	.1146	.7000	.5000		
68	146.5	4.006	3.434E-03	.0879	3.873E-03	.0991	3.910E-03	.1000	.9000	.5000		
69	144.6	5.322	4.189E-03	.2096	9.266E-03	.2371	9.052E-03	.2316	.1000	.6000		
70	143.1	6.042	7.055E-03	.1805	7.981E-03	.2042	7.401E-03	.1946	.2000	.6000		
71	171.3	6.808	5.911E-03	.1513	6.679E-03	.1709	6.515E-03	.1667	.4300	.6000		
72	154.1	4.706	4.026E-03	.1030	4.540E-03	.1162	4.460E-03	.1141	.6000	.6000		
73	149.9	3.498	2.982E-03	.0763	3.361E-03	.0860	3.356E-03	.0859	.8000	.6000		
74	156.6	3.421	2.933E-03	.0750	3.308E-03	.0846	3.337E-03	.0854	.9000	.6000		
75	218.7	16.498	1.494E-02	.3823	1.697E-02	.4343	1.654E-02	.4233	.1000	.7500		
76	149.4	6.840	5.929E-03	.1517	6.697E-03	.1714	6.537E-03	.1673	.3000	.7500		
77	149.5	7.483	6.487E-03	.1660	7.328E-03	.1975	7.167E-03	.1834	.5000	.7500		
78	180.3	12.604	1.103E-02	.2823	1.247E-02	.3192	1.234E-02	.3156	.7000	.7500		
79	171.6	5.405	8.168E-03	.2090	9.229E-03	.2361	9.304E-03	.2381	.9000	.7500		
80	199.3	12.342	1.098E-02	.2810	1.245E-02	.3185	1.213E-02	.3103	.1000	.8500		
81	212.0	17.133	1.542E-02	.3946	1.751E-02	.4479	1.706E-02	.4366	.3000	.8500		
82	208.7	17.785	1.596E-02	.4084	1.811E-02	.4634	1.770E-02	.4530	.5000	.8500		
83	189.8	10.268	9.061E-03	.2318	1.026E-02	.2625	9.988E-03	.2556	.1000	.9500		
84	148.1	11.859	1.045E-02	.2674	1.183E-02	.3027	1.158E-02	.2962	.5000	.9500		
85	141.0	11.324	1.000E-02	.2560	1.133E-02	.2898	1.140E-02	.2918	.9000	.9500		

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VAJ57-211A

GROUP	CONFIG	MODEL	MACH	NU	PU, PSIA	TO, DEG H	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	HOLL	MODEL	YAW
46	1		7.98		425.8	1302	30.04	.09	30.00	0		-0
T-1NF (DEG R)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT3)	MU-1NF (LB-SEC/FT2)	RE/FT (FT-1)	MHEF-FH (H=.0175FT)	STFR (H=.0175FT)	SWITCH			
94.8	0.44	1.976	3807	3.923F-05	7.613E-08	1.957F 06	3.453E-02	2.911E-02	1			
GAGE	TW	COOT	H(10)	H(10)/HREF	H(910)	H(910C)/HREF	H(TAW)	X/L	PHI	2Y/B		
1	151.0	5.583	4.850E-03	.1405	5.469E-03	.1584	.1227	.0050		0		
2	224.7	18.636	1.730E-02	.5010	1.968E-02	.5698	.5014	.0120		0		
3	192.3	13.407	1.208E-02	.3499	1.369E-02	.3964	.3625	.0200		0		
4	170.8	5.563	6.454E-03	.2448	9.554E-03	.2767	.2615	.0400		0		
6	156.8	7.194	6.282E-03	.1819	7.088E-03	.2053	.1969	.0600		0		
7	148.8	6.256	5.424E-03	.1571	6.115E-03	.1771	.1717	.0800		0		
8	145.2	5.802	5.016E-03	.1453	5.652E-03	.1637	.1598	.1000		0		
10	137.4	4.740	4.070E-03	.1179	4.582E-03	.1227	.1306	.1500		0		
12	156.2	6.170	5.385E-03	.1559	6.075E-03	.1754	.1730	.1500		0		
13	156.0	4.421	3.850E-03	.1117	4.353E-03	.1261	.1240	.1500		0		
17	154.4	4.702	4.097E-03	.1147	4.621E-03	.1338	.1322	.2000		0		
19	134.8	3.685	3.157E-03	.0914	3.553E-03	.1029	.1016	.2250		0		
20	134.4	3.753	3.214E-03	.0931	3.617E-03	.1048	.1037	.2500		0		
22	140.6	3.722	3.205E-03	.0928	3.610E-03	.1045	.1036	.2750		0		
24	153.2	4.329	3.769E-03	.1091	4.250E-03	.1231	.1220	.3000		0		
25	162.8	4.423	3.882E-03	.1124	4.383E-03	.1269	.1258	.3000		0		
26	172.9	4.381	3.880E-03	.1124	4.385E-03	.1270	.1258	.3000		0		
29	155.9	3.248	2.851E-03	.0826	3.217E-03	.0932	.0923	.3250		0		
30	153.8	2.814	2.451E-03	.0810	2.764E-03	.0801	.0743	.3500		0		
31	148.0	3.380	2.929E-03	.0848	3.302E-03	.0856	.0848	.4000		0		
32	154.6	3.431	2.990E-03	.0866	3.373E-03	.0877	.0868	.4000		0		
33	150.7	3.110	2.702E-03	.0782	3.046E-03	.0828	.0817	.4500		0		
34	142.3	3.478	2.999E-03	.0868	3.378E-03	.0878	.0869	.5000		0		
35	158.4	2.991	2.616E-03	.0757	2.952E-03	.0855	.0847	.5000		0		
37	145.9	3.167	2.740E-03	.0793	3.087E-03	.0894	.0886	.5500		0		
38	148.2	3.021	2.610E-03	.0748	2.951E-03	.0855	.0847	.6000		0		
39	159.2	2.832	2.478E-03	.0718	2.796E-03	.0810	.0802	.6000		0		
40	152.5	2.976	2.589E-03	.0750	2.920E-03	.0844	.0838	.6000		0		
41	153.6	2.871	2.500E-03	.0724	2.820E-03	.0817	.0809	.7000		0		
43	141.4	2.777	2.435E-03	.0705	2.748E-03	.0796	.0789	.7500		0		
44	140.2	2.911	2.549E-03	.0738	2.877E-03	.0833	.0826	.8000		0		
45	173.2	2.708	2.399E-03	.0695	2.712E-03	.0785	.0778	.8000		0		
46	163.1	2.621	2.301E-03	.0666	2.598E-03	.0753	.0749	.8500		0		
47	157.0	2.759	2.409E-03	.0688	2.719E-03	.0787	.0787	.9000		0		
48	154.0	3.242	2.824E-03	.0818	3.185E-03	.0922	.0923	.9000		0		
49	158.6	2.526	2.209E-03	.0640	2.459E-03	.0722	.0725	.9500		0		
50	152.5	2.639	2.296E-03	.0665	2.589E-03	.0750	.0755	1.0000		0		
51	170.7	2.771	2.449E-03	.0709	2.768E-03	.0802	.0808	1.0000		0		

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AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP	CONFIG	MODEL	MACH	NU	PO-PSIA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL	MODEL	YAW
46	1		7.98		425.8	1302	10.09	.09	30.00	0	-0	
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SFC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH			
94.8	.044	1.976	3807	3.923E-05	7.633E-08	1.957E 06	3.453E-02	2.911E-02	1			
GAGE	TM	QDOT	H(TO)	H(TO)/HREF	H(.9TU)	H(.9TC)/HREF	H(TAW)	X/C	2Y/B			
52	184.0	4.259	3.809E-03	.1103	4.311E-03	.1249	4.206E-03	.0820	.2500			
53	185.0	3.128	2.825E-03	.0818	3.202E-03	.0927	3.156E-03	.3020	.2500			
54	185.9	2.926	2.584E-03	.0748	2.920E-03	.0846	2.877E-03	.4470	.2500			
55	180.2	2.703	2.368E-03	.0686	2.673E-03	.0774	2.631E-03	.5910	.2500			
56	176.6	2.717	2.414E-03	.0699	2.730E-03	.0790	2.713E-03	.7360	.2500			
57	170.1	3.414	3.016E-03	.0874	3.408E-03	.0987	3.396E-03	.8810	.2500			
58	183.8	7.527	6.731E-03	.1949	7.618E-03	.2206	7.321E-03	.0500	.2500			
59	172.4	6.214	5.501E-03	.1593	6.217E-03	.1801	6.038E-03	.1000	.4000			
60	180.1	4.704	4.120E-03	.1193	4.450E-03	.1347	4.535E-03	.1313	.4000			
61	188.8	4.070	3.530E-03	.1022	3.895E-03	.1152	3.895E-03	.1128	.4000			
62	159.1	3.773	3.302E-03	.0956	3.726E-03	.1079	3.670E-03	.1063	.4000			
63	157.4	4.730	4.133E-03	.1197	4.663E-03	.1350	4.615E-03	.1336	.4000			
64	160.7	6.601	5.784E-03	.1675	6.529E-03	.1891	6.582E-03	.1906	.4000			
65	167.4	6.962	6.136E-03	.1777	6.931E-03	.2007	6.785E-03	.1760	.5000			
66	155.7	5.253	4.582E-03	.1327	5.170E-03	.1497	5.054E-03	.1464	.5000			
67	151.2	4.026	3.498E-03	.1013	3.944E-03	.1142	3.898E-03	.1129	.5000			
68	165.5	8.725	7.704E-03	.2231	8.705E-03	.2521	8.509E-03	.2464	.5000			
69	147.1	6.922	6.094E-03	.1766	6.802E-03	.1995	6.738E-03	.1951	.6000			
70	156.7	5.785	5.051E-03	.1483	5.698E-03	.1650	5.563E-03	.1611	.6000			
71	145.8	4.310	3.727E-03	.1079	4.200E-03	.1216	4.128E-03	.1196	.6000			
72	138.4	3.339	2.870E-03	.0831	3.231E-03	.0936	3.228E-03	.0935	.6000			
73	142.6	2.472	2.477E-03	.0717	2.790E-03	.0808	2.815E-03	.0815	.6000			
74	147.5	12.239	1.098E-02	.3180	1.243E-02	.3601	1.213E-02	.3514	.7500			
75	157.5	6.006	5.248E-03	.1520	5.922E-03	.1715	5.743E-03	.1675	.7500			
76	149.5	5.076	4.404E-03	.1275	4.965E-03	.1438	4.859E-03	.1407	.7500			
77	140.3	4.721	4.078E-03	.1181	4.595E-03	.1331	4.546E-03	.1317	.7500			
78	141.9	3.360	2.894E-03	.0839	3.262E-03	.0945	3.289E-03	.0952	.7500			
79	175.1	11.313	1.007E-02	.2918	1.140E-02	.3300	1.111E-02	.3217	.7500			
80	191.5	14.626	1.317E-02	.3814	1.492E-02	.4321	1.455E-02	.4215	.8500			
81	191.6	12.848	1.147E-02	.3321	1.269E-02	.3758	1.269E-02	.3677	.8500			
83	173.8	9.267	8.214E-03	.2379	9.285E-03	.2689	9.047E-03	.2620	.9500			
84	168.9	9.767	8.620E-03	.2496	9.739E-03	.2820	9.538E-03	.2762	.9500			
85	148.0	5.903	8.732E-03	.2529	9.065E-03	.2857	9.038E-03	.2877	.9500			

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VAJ52-21DA

GROUP	CONFIG	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PHREBEND	HOLL MODEL	YAW
47	1		7.98	425.7	1302	15.11	5.11	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LH-SFC/FT2)	RE/FT (FY-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH	POSITION
94.8	.044	1.975	3807	3.922E-05	7.633E-08	1.946E 06	3.453E-02	2.911E-02	1	
GAGE	TW	GDOT	H(TO)	H(TO)/HREF	H(.9TU)	H(.9TO)/HREF	H(TAW)	X/L	PHI	2Y/8
1	143.9	5.922	5.203E-03	.1507	5.876E-03	.1702	4.403E-03	.1275	.0050	0
2	238.5	18.330	1.724E-02	.4991	1.964E-02	.5688	1.678E-02	.4860	.0120	0
3	206.0	13.562	1.237E-02	.3584	1.404E-02	.4067	1.251E-02	.3624	.0200	0
4	180.9	10.600	9.455E-03	.2738	1.070E-02	.3098	9.884E-03	.2862	.0400	0
5	166.4	7.919	6.974E-03	.2020	7.877E-03	.2281	7.399E-03	.2143	.0600	0
6	158.6	6.969	6.095E-03	.1765	6.879E-03	.1992	6.539E-03	.1894	.0800	0
7	155.3	6.755	5.891E-03	.1706	6.466E-03	.1925	6.363E-03	.1843	.1000	0
8	149.0	5.241	4.546E-03	.1316	5.124E-03	.1484	4.951E-03	.1434	.1500	0
9	170.1	6.431	5.681E-03	.1645	6.426E-03	.1859	6.198E-03	.1795	.30.0000	0
10	166.5	4.360	3.840E-03	.1112	4.337E-03	.1256	4.188E-03	.1213	45.5000	0
11	145.2	4.956	4.360E-03	.1263	4.924E-03	.1426	4.777E-03	.1303		
12	141.9	4.435	3.823E-03	.1107	4.306E-03	.1247	4.177E-03	.1210		
13	142.9	4.574	3.946E-03	.1143	4.445E-03	.1287	4.327E-03	.1253		
14	147.7	4.629	4.010E-03	.1161	4.520E-03	.1309	4.403E-03	.1275		
15	147.3	4.873	4.268E-03	.1236	4.817E-03	.1395	4.692E-03	.1359		
16	167.9	4.989	4.399E-03	.1274	4.970E-03	.1439	4.839E-03	.1401		
17	177.4	4.919	4.374E-03	.1267	4.947E-03	.1433	4.816E-03	.1395		
18	163.0	3.733	3.277E-03	.0949	3.700E-03	.1072	3.603E-03	.1044		
19	160.4	2.564	2.244E-03	.0650	2.535E-03	.0734	2.469E-03	.0715		
20	158.1	2.722	3.254E-03	.0942	3.672E-03	.1063	3.576E-03	.1036		
21	160.9	3.681	3.224E-03	.0934	3.641E-03	.1055	3.546E-03	.1027		
22	158.0	3.586	3.138E-03	.0908	3.537E-03	.1024	3.445E-03	.0998		
23	152.7	2.776	3.286E-03	.0952	3.706E-03	.1073	3.610E-03	.1045		
24	158.0	3.320	2.902E-03	.0840	3.275E-03	.0948	3.189E-03	.0924		
25	158.0	3.459	3.024E-03	.0876	3.412E-03	.0988	3.323E-03	.0962		
26	154.4	3.552	3.105E-03	.0899	3.504E-03	.1015	3.412E-03	.0988		
27	154.3	3.498	2.841E-03	.0823	3.208E-03	.0929	3.124E-03	.0905		
28	142.6	3.630	3.066E-03	.0888	3.641E-03	.1002	3.502E-03	.0976		
29	148.5	3.499	3.087E-03	.0894	3.477E-03	.1042	3.396E-03	.1014		
30	144.2	2.512	3.086E-03	.0894	3.485E-03	.1010	3.396E-03	.0983		
31	175.8	3.311	2.940E-03	.0851	3.325E-03	.1009	3.236E-03	.0983		
32	166.9	2.319	2.924E-03	.0847	3.302E-03	.0963	3.236E-03	.0937		
33	157.5	2.425	2.993E-03	.0867	3.377E-03	.0978	3.324E-03	.0963		
34	159.6	3.378	2.954E-03	.0856	3.662E-03	.1061	3.604E-03	.1044		
35	155.7	3.805	3.320E-03	.0961	3.745E-03	.1085	3.717E-03	.1076		
36	173.0	3.608	3.196E-03	.0926	3.612E-03	.1046	3.585E-03	.1038		

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
VA352-21HA

GROUP	CONFIG	MODEL	MACH NO	P0,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
47	1		7.98	425.7	1302	35.11	5.11	30.00	0	-0
T-INF (DEGR)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LH-SEC/FT2)	HE/FT (FT-1)	HREF-FH (H=.0175FT) 3.453E-02	SIFR (R=.0175FT) 2.911E-02	SWITCH POSITION	2Y/B
94.8	.044	1.975	3807	3.922E-05	7.613E-08	1.956E 06			1	
GAGE	TW	GOOT	H(TO)	H(TOI)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	V/C		
52	180.5	4.720	4.209E-03	.1219	4.762E-03	.1379	4.457E-03	.1320	.0820	.2500
53	177.1	3.921	3.485E-03	.1009	3.942E-03	.1142	3.815E-03	.1105	.3020	.2500
54	176.3	3.184	2.823E-03	.0818	3.191E-03	.0924	3.088E-03	.0894	.4470	.2500
55	157.7	3.087	2.722E-03	.0788	3.075E-03	.0890	2.980E-03	.0863	.5910	.2500
56	177.4	3.347	2.976E-03	.0862	3.366E-03	.0975	3.289E-03	.0952	.7340	.2500
57	169.4	3.554	3.138E-03	.0909	3.566E-03	.1027	3.474E-03	.1006	.8810	.2500
58	185.6	7.352	6.586E-03	.1907	7.455E-03	.2159	7.016E-03	.2032	.0500	.4000
59	177.7	6.221	5.533E-03	.1602	6.258E-03	.1812	5.957E-03	.1725	.1000	.4000
60	170.3	5.001	4.419E-03	.1280	4.994E-03	.1446	4.774E-03	.1383	.2000	.4000
61	158.5	4.639	4.057E-03	.1175	4.578E-03	.1266	4.398E-03	.1274	.3000	.4000
62	159.8	4.227	3.700E-03	.1072	4.176E-03	.1209	4.039E-03	.1170	.5600	.4000
63	159.2	3.897	3.412E-03	.0988	3.851E-03	.1115	3.745E-03	.1085	.7000	.4000
64	170.7	3.986	3.430E-03	.0993	3.862E-03	.1119	3.837E-03	.1111	.9000	.4000
65	181.1	6.180	5.513E-03	.1597	6.238E-03	.1806	5.989E-03	.1734	.1760	.5000
66	161.3	4.934	4.326E-03	.1253	4.883E-03	.1414	4.684E-03	.1356	.4840	.5000
82	155.7	4.054	3.537E-03	.1024	3.990E-03	.1155	3.874E-03	.1122	.7000	.5000
67	142.1	4.453	3.839E-03	.1112	4.325E-03	.1252	4.303E-03	.1246	.9000	.5000
69	189.4	8.446	7.591E-03	.2198	8.597E-03	.2490	8.238E-03	.2386	.1000	.6000
70	144.7	6.854	6.105E-03	.1768	6.906E-03	.2000	6.625E-03	.1919	.2000	.6000
71	150.7	5.113	4.441E-03	.1522	5.933E-03	.1718	5.641E-03	.1645	.6300	.6000
72	148.0	3.721	3.225E-03	.1286	5.007E-03	.1450	4.832E-03	.1399	.6000	.6000
73	143.7	4.158	3.590E-03	.0934	3.635E-03	.1053	3.573E-03	.1035	.8000	.6000
74	194.4	10.037	9.062E-03	.1040	4.044E-03	.1171	4.022E-03	.1165	.9000	.6000
75	165.8	6.149	5.411E-03	.2624	1.027E-02	.2974	9.824E-03	.2845	.1000	.7500
76	140.0	5.111	4.475E-03	.1567	6.111E-03	.1770	5.855E-03	.1696	.3000	.7500
77	151.6	4.530	3.938E-03	.1296	5.051E-03	.1463	4.851E-03	.1405	.5000	.7500
78	138.8	4.260	3.662E-03	.1140	4.440E-03	.1286	4.317E-03	.1250	.7000	.7500
79	212.7	14.114	1.296E-02	.3752	1.472E-02	.4264	1.405E-02	.4059	.1000	.8500
80	176.7	7.715	6.856E-03	.1986	7.753E-03	.2245	7.422E-03	.2149	.3000	.8500
81	161.4	6.054	5.307E-03	.1537	5.991E-03	.1735	5.756E-03	.1667	.5000	.8500
83	188.4	11.654	1.046E-02	.3031	1.185E-02	.3432	1.132E-02	.3277	.1000	.9500
84	144.0	12.425	1.111E-02	.3219	1.238E-02	.3643	1.204E-02	.3499	.5000	.9500
85	156.7	6.425	5.610E-03	.1625	6.329E-03	.1833	6.278E-03	.1818	.9000	.9500

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

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AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-216A

GROUP	CONFID	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
4A	1		7.98	425.2	1301	25.15	-4.85	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	SIFR (H=.0175FT)	SWITCH POSITION	
94.7	.044	1.973	3806	3.920E-05	7.628E-08	1.956E 06	3.450E-02	2.912E-02	1	
GAGE	TW	GOOT	H(TO)	H(TO)/HREF	H(.9TU)	H(.9TC)/HREF	H(TAW)	X/C	2Y/B	
52	166.4	4.111	3.623E-03	.1050	4.093E-03	.1186	4.063E-03	.1178	.2500	
53	145.6	3.024	2.663E-03	.0772	3.008E-03	.0872	3.012E-03	.0873	.2500	
54	163.2	2.459	2.161E-03	.0626	2.440E-03	.0707	2.443E-03	.0708	.2500	
55	152.7	2.320	2.020E-03	.0586	2.279E-03	.0660	2.284E-03	.0662	.2500	
56	166.2	2.389	2.106E-03	.0610	2.378E-03	.0689	2.399E-03	.0695	.2500	
57	164.1	2.044	1.798E-03	.0521	2.030E-03	.0588	2.052E-03	.0595	.2500	
58	180.2	7.909	7.056E-03	.2045	7.983E-03	.2314	7.818E-03	.2266	.4000	
59	170.3	5.899	5.217E-03	.1512	5.896E-03	.1709	5.827E-03	.1689	.4000	
60	147.5	4.373	3.824E-03	.1108	4.315E-03	.1251	4.280E-03	.1241	.4000	
61	146.0	3.715	3.216E-03	.0932	3.625E-03	.1051	3.607E-03	.1045	.4000	
62	149.1	3.314	2.877E-03	.0834	3.243E-03	.0940	3.245E-03	.0941	.4000	
63	145.1	3.458	2.992E-03	.0867	3.371E-03	.0977	3.387E-03	.0982	.4000	
64	138.1	2.256	1.940E-03	.0562	2.184E-03	.0633	2.229E-03	.0646	.4000	
65	170.6	5.941	5.256E-03	.1523	5.940E-03	.1722	5.911E-03	.1713	.5000	
66	155.5	4.248	3.708E-03	.1075	4.183E-03	.1213	4.154E-03	.1205	.5000	
67	153.1	3.962	3.451E-03	.1000	3.892E-03	.1128	3.904E-03	.1132	.5000	
68	165.8	5.366	4.710E-03	.1365	5.320E-03	.1542	5.288E-03	.1533	.5000	
69	154.1	4.018	3.504E-03	.1016	3.952E-03	.1145	3.930E-03	.1139	.6000	
70	151.1	2.939	2.556E-03	.0741	2.882E-03	.0835	2.861E-03	.0829	.6000	
71	142.1	2.780	2.262E-03	.0946	2.494E-03	.1065	2.525E-03	.1064	.6000	
72	142.2	2.565	2.214E-03	.0842	2.494E-03	.0723	2.525E-03	.0732	.6000	
73	139.6	2.613	2.248E-03	.0652	2.531E-03	.0734	2.585E-03	.0749	.6000	
74	176.6	8.849	7.869E-03	.2281	8.899E-03	.2579	8.835E-03	.2561	.7500	
75	148.2	6.709	5.923E-03	.1717	6.691E-03	.1939	6.644E-03	.1926	.7500	
76	151.7	4.507	3.921E-03	.1137	4.421E-03	.1282	4.399E-03	.1275	.7500	
77	147.2	3.960	3.432E-03	.0995	3.868E-03	.1121	3.885E-03	.1126	.7500	
78	139.9	3.282	2.827E-03	.0819	3.184E-03	.0923	3.249E-03	.0942	.7500	
79	142.9	5.617	8.601E-03	.2493	9.734E-03	.2821	9.654E-03	.2798	.8500	
80	156.0	5.571	4.865E-03	.1410	5.489E-03	.1591	5.449E-03	.1579	.8500	
81	173.4	11.095	9.840E-03	.2852	1.112E-02	.3224	1.107E-02	.3208	.8500	
83	191.6	10.286	9.189E-03	.2663	1.040E-02	.3014	1.031E-02	.2987	.9500	
84	147.9	5.048	4.378E-03	.1269	4.934E-03	.1430	4.914E-03	.1424	.9500	
85	154.3	6.715	5.855E-03	.1697	6.405E-03	.1914	6.735E-03	.1952	.9500	

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP	CONFIG	MODEL	MACH NO	PU+PSIA	TO+DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
49	1		7.96	327.6	1287	30.09	.09	30.00	0	-0	
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	HE/FT (FT-1)		MHEF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH	
94.1	.035	1.537	3744	3.090E-05	7.576E-08	1.543E 04		3.040E-02	3.276E-02	1	
GAGE	TW	GDOT	H(TO)	M(TO)/HREF	H(.9TO)	M(.9TO)/HREF	H(TAW)	M(TAW)/HREF	X/L	PHI	2Y/B
1	148.4	5.009	4.399E-03	.1447	4.960E-03	.1432	3.843E-03	.1264	.0050		0
4	214.6	16.271	1.517E-02	.4991	1.724E-02	.5672	1.519E-02	.4995	.0120		0
2	184.4	11.665	1.058E-02	.3480	1.198E-02	.3940	1.096E-02	.3605	.0200		0
3	164.9	8.402	7.488E-03	.2463	8.458E-03	.2782	7.946E-03	.2630	.0400		0
6	151.7	6.601	5.815E-03	.1913	6.558E-03	.2157	6.293E-03	.2070	.0600		0
7	144.6	5.667	4.961E-03	.1632	5.591E-03	.1839	5.423E-03	.1784	.0800		0
8	141.7	5.162	4.507E-03	.1483	5.078E-03	.1670	4.957E-03	.1630	.1000		0
10	135.7	4.124	3.582E-03	.1178	4.033E-03	.1327	3.968E-03	.1305	.1500		0
12	125.7	3.205	2.601E-03	.1513	3.191E-03	.1708	3.106E-03	.1679	.2000		0
13	127.5	3.735	3.307E-03	.1088	3.732E-03	.1228	3.671E-03	.1207	.2500		0
17	154.8	4.076	3.600E-03	.1184	4.062E-03	.1336	4.012E-03	.1320	.3000		0
19	132.5	3.255	2.819E-03	.0927	3.173E-03	.1044	3.132E-03	.1030	.3500		0
20	134.2	3.166	2.746E-03	.0903	3.091E-03	.1017	3.061E-03	.1007	.4000		0
22	141.2	3.103	2.708E-03	.0891	3.050E-03	.1003	3.023E-03	.0994	.4500		0
24	154.4	3.680	3.250E-03	.1069	3.666E-03	.1206	3.633E-03	.1195	.5000		0
25	142.1	3.856	3.428E-03	.1128	3.870E-03	.1273	3.835E-03	.1262	.5500		0
26	171.3	3.840	3.462E-03	.1132	3.890E-03	.1280	3.854E-03	.1268	.6000		0
29	158.8	2.664	2.361E-03	.0777	2.665E-03	.0877	2.641E-03	.0869	.6500		0
30	159.6	2.628	2.331E-03	.0767	2.631E-03	.0866	2.607E-03	.0858	.7000		0
31	151.1	2.804	2.469E-03	.0812	2.749E-03	.0916	2.724E-03	.0908	.7500		0
32	158.9	2.747	2.435E-03	.0801	2.749E-03	.0904	2.724E-03	.0896	.8000		0
33	149.6	2.593	2.280E-03	.0750	2.571E-03	.0846	2.548E-03	.0838	.8500		0
34	140.1	2.945	2.568E-03	.0845	2.892E-03	.0951	2.866E-03	.0943	.9000		0
35	150.0	2.510	2.208E-03	.0726	2.490E-03	.0819	2.467E-03	.0812	.9500		0
37	144.3	2.587	2.264E-03	.0745	2.552E-03	.0839	2.529E-03	.0832	1.0000		0
38	143.4	2.634	2.303E-03	.0758	2.595E-03	.0854	2.572E-03	.0846			0
39	148.8	2.493	2.190E-03	.0720	2.469E-03	.0812	2.447E-03	.0805			0
40	147.2	2.565	2.251E-03	.0740	2.537E-03	.0835	2.514E-03	.0827			0
41	145.3	2.466	2.160E-03	.0711	2.435E-03	.0801	2.413E-03	.0794			0
43	151.0	2.316	2.039E-03	.0671	2.299E-03	.0756	2.279E-03	.0750			0
44	148.3	2.312	2.030E-03	.0668	2.284E-03	.0753	2.268E-03	.0746			0
45	159.1	2.339	2.074E-03	.0682	2.341E-03	.0770	2.320E-03	.0763			0
46	151.7	2.026	1.784E-03	.0587	2.012E-03	.0662	2.004E-03	.0659			0
47	146.5	2.031	1.781E-03	.0586	2.007E-03	.0660	2.007E-03	.0660			0
48	144.1	2.752	2.408E-03	.0792	2.714E-03	.0893	2.714E-03	.0893			0
49	148.9	1.713	1.505E-03	.0495	1.697E-03	.0558	1.705E-03	.0561			0
50	143.3	1.757	1.537E-03	.0505	1.731E-03	.0570	1.744E-03	.0574			0
51	159.9	2.003	1.777E-03	.0585	2.006E-03	.0660	2.021E-03	.0665			0

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AEDICARO, INC., ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO, PSTA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
49	1		7.96	327.6	1287	30.09	.09	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	WU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH (H=.0175FT) POSITION	
94.1	.035	1.537	3784	3.090E-05	7.576E-08	1.543E 06	3.040E-02	3.274E-02	1	
GAGE	TW	COOT	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(TAW)/HREF	X/C	2Y/B	
52	180.9	3.632	3.284E-03	.1080	3.716E-03	.1222	3.626E-03	.0420	.2500	
53	173.5	2.937	2.638E-03	.0868	2.983E-03	.0981	2.940E-03	.3020	.2500	
54	157.7	2.557	2.264E-03	.0745	2.558E-03	.0841	2.519E-03	.4470	.2500	
55	150.4	2.397	2.029E-03	.0668	2.289E-03	.0753	2.259E-03	.5910	.2500	
56	142.3	2.316	2.060E-03	.0678	2.326E-03	.0765	2.312E-03	.7360	.2500	
57	156.9	2.178	1.927E-03	.0634	2.175E-03	.0715	2.167E-03	.8810	.2500	
58	173.4	6.714	6.029E-03	.1983	6.818E-03	.2742	6.553E-03	.0500	.4000	
59	163.3	5.529	4.920E-03	.1618	5.556E-03	.1828	5.397E-03	.1775	.4000	
60	163.0	4.127	3.639E-03	.1197	4.105E-03	.1350	4.004E-03	.1317	.4000	
61	141.6	3.454	3.016E-03	.0992	3.347E-03	.1118	3.266E-03	.1094	.4000	
62	148.1	3.149	2.765E-03	.0910	3.117E-03	.1025	3.070E-03	.1010	.4000	
63	146.4	3.025	2.652E-03	.0872	2.989E-03	.0983	2.959E-03	.0973	.4000	
64	146.6	2.245	1.986E-03	.0653	2.237E-03	.0736	2.254E-03	.0742	.4000	
65	158.4	6.221	5.512E-03	.1813	6.221E-03	.2047	6.091E-03	.2004	.5000	
66	147.7	4.606	4.043E-03	.1330	4.558E-03	.1499	4.457E-03	.1466	.5000	
67	147.2	3.330	2.921E-03	.0961	3.293E-03	.1083	3.255E-03	.1071	.5000	
68	148.1	2.762	2.404E-03	.0791	2.707E-03	.0891	2.733E-03	.0899	.5000	
69	150.4	7.487	6.645E-03	.2186	7.503E-03	.2468	7.334E-03	.2413	.6000	
70	147.9	5.047	4.431E-03	.1457	6.029E-03	.1983	5.897E-03	.1940	.6000	
71	141.0	3.471	3.029E-03	.0996	4.995E-03	.1443	4.877E-03	.1604	.6000	
72	136.3	2.766	2.403E-03	.0791	3.412E-03	.1123	3.354E-03	.1103	.6000	
73	141.9	2.405	2.100E-03	.0691	2.708E-03	.0790	2.703E-03	.0889	.6000	
74	148.5	5.204	8.229E-03	.2707	9.299E-03	.3059	9.078E-03	.2986	.6000	
75	149.0	5.191	4.562E-03	.1501	5.143E-03	.1692	5.024E-03	.1653	.7500	
76	145.5	4.204	3.683E-03	.1212	4.151E-03	.1365	4.063E-03	.1336	.7500	
77	142.9	3.799	3.320E-03	.1092	3.741E-03	.1231	3.702E-03	.1218	.7500	
78	140.5	2.808	2.449E-03	.0806	2.759E-03	.0908	2.781E-03	.0915	.7500	
79	174.1	5.561	8.591E-03	.2826	9.713E-03	.3196	9.472E-03	.3116	.8500	
80	177.0	11.774	1.061E-02	.3449	1.200E-02	.3947	1.171E-02	.3851	.8500	
81	160.8	5.112	8.091E-03	.2661	9.134E-03	.3005	8.941E-03	.2941	.8500	
83	166.2	8.225	7.338E-03	.2414	8.290E-03	.2727	8.079E-03	.2657	.9500	
84	158.8	8.040	7.126E-03	.2344	8.044E-03	.2646	7.879E-03	.2592	.9500	
85	160.3	8.293	7.360E-03	.2421	8.309E-03	.2733	8.267E-03	.2752	.9500	

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21BA

GROUP	CONFIG	MODEL	MACH	NU	PU,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
50	1		7.96		325.1	1285	35.14	5.14	30.00	0	-0	
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (R= .0175FT)	STFR (R= .0175FT)	SWITCH POSITION			
GAGE	TW	CDOT	H(TO)	H(TO)/HREF	H(.9TU)	H(.9TC)/HREF	H(TAW)/HREF	X/L	PHI	2Y/B		
1	149.5	4.927	4.417E-03	.1459	4.992E-03	.1649	3.733E-03	.0050				
2	230.5	15.994	1.517E-02	.5009	1.727E-02	.5704	1.477E-02	.0050				
3	177.8	11.535	1.065E-02	.3516	1.208E-02	.3989	1.076E-02	.0050				
4	230.5	15.994	1.517E-02	.5009	1.727E-02	.5704	1.477E-02	.0050				
5	177.8	11.535	1.065E-02	.3516	1.208E-02	.3989	1.076E-02	.0050				
6	142.9	7.125	6.350E-03	.2668	9.138E-03	.3018	8.443E-03	.0050				
7	154.3	6.528	5.774E-03	.2097	7.171E-03	.2368	6.736E-03	.0050				
8	152.8	5.844	5.162E-03	.1907	6.514E-03	.2151	6.193E-03	.0050				
9	151.4	4.309	3.801E-03	.1705	5.823E-03	.1923	5.575E-03	.0050				
10	151.4	4.309	3.801E-03	.1705	5.823E-03	.1923	5.575E-03	.0050				
11	151.4	4.309	3.801E-03	.1705	5.823E-03	.1923	5.575E-03	.0050				
12	179.3	5.254	4.752E-03	.1255	4.287E-03	.1416	4.141E-03	.0050				
13	181.6	3.437	3.115E-03	.1569	5.377E-03	.1776	5.188E-03	.0050				
14	171.5	4.147	3.724E-03	.1029	3.526E-03	.1164	3.402E-03	.0050				
15	139.6	3.967	3.463E-03	.1230	4.210E-03	.1390	4.083E-03	.0050				
16	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
17	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
18	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
19	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
20	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
21	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
22	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
23	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
24	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
25	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
26	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
27	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
28	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
29	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
30	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
31	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
32	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
33	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
34	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
35	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
36	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
37	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
38	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
39	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
40	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
41	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
42	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
43	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
44	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
45	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
46	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
47	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
48	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
49	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
50	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				
51	141.0	3.911	3.419E-03	.1124	3.901E-03	.1288	3.783E-03	.0050				

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
50	1		7.96	325.1	1285	35.14	5.14	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	SIFR (R=.0175FT)	SWITCH POSITION	
94.0	.034	1.526	3781	3.072E-05	7.566E-08	1.535E 06	3.028E-02	3.285E-02	1	
GAGE	TW	CDOT	H(TOI)	H(TOI)/HREF	H(.9TO)	H(.9TO)/HREF	H(TA#)/HREF	X/C	2Y/B	
52	177.4	4.074	3.578E-03	.1215	4.161E-03	.1374	3.982E-03	.0820	.2500	
53	148.9	2.437	3.080E-03	.1017	3.480E-03	.1149	3.369E-03	.3020	.2500	
54	146.3	2.781	2.486E-03	.0821	2.809E-03	.0928	2.718E-03	.0898	.2500	
55	160.1	2.629	2.337E-03	.0772	2.639E-03	.0871	2.557E-03	.5910	.2500	
56	148.3	2.647	2.370E-03	.0783	2.678E-03	.0884	2.617E-03	.0864	.2500	
57	141.7	2.473	2.202E-03	.0727	2.486E-03	.0821	2.436E-03	.0804	.2500	
58	179.0	6.407	5.793E-03	.1913	6.554E-03	.2165	6.169E-03	.0500	.4000	
59	171.2	5.366	4.817E-03	.1591	5.445E-03	.1798	5.184E-03	.1712	.4000	
60	162.3	4.294	3.825E-03	.1263	4.319E-03	.1426	4.131E-03	.2000	.4000	
61	153.3	3.889	3.437E-03	.1135	3.877E-03	.1280	3.724E-03	.3000	.4000	
62	152.1	3.261	2.878E-03	.0951	3.247E-03	.1072	3.140E-03	.5600	.4000	
63	153.4	3.017	2.666E-03	.0880	3.008E-03	.0993	2.925E-03	.0966	.4000	
64	174.4	3.294	2.863E-03	.0945	3.223E-03	.1064	3.201E-03	.1057	.4000	
65	172.7	5.411	4.865E-03	.1607	5.500E-03	.1917	5.282E-03	.1744	.5000	
66	153.5	4.116	3.637E-03	.1201	4.103E-03	.1355	3.936E-03	.1300	.5000	
67	151.6	3.227	2.847E-03	.0940	3.211E-03	.1060	3.117E-03	.1029	.5000	
68	140.0	3.147	2.748E-03	.0908	3.096E-03	.1022	3.080E-03	.1017	.5000	
69	149.1	7.501	6.795E-03	.2244	7.690E-03	.2540	7.370E-03	.2434	.6000	
70	155.6	6.055	5.424E-03	.1793	6.135E-03	.2026	5.886E-03	.1944	.6000	
71	144.8	4.366	3.829E-03	.1265	4.315E-03	.1425	4.165E-03	.1376	.6000	
72	146.1	2.888	2.536E-03	.0838	2.859E-03	.0944	2.810E-03	.0928	.6000	
73	142.0	3.241	2.835E-03	.0936	3.194E-03	.1055	3.176E-03	.1049	.6000	
74	146.1	6.679	7.898E-03	.2608	8.944E-03	.2954	8.557E-03	.2826	.7500	
75	156.8	5.460	4.839E-03	.1598	5.461E-03	.1704	5.233E-03	.1728	.7500	
76	153.3	4.276	3.778E-03	.1248	4.262E-03	.1408	4.094E-03	.1352	.7500	
77	150.8	3.777	3.330E-03	.1100	3.755E-03	.1240	3.651E-03	.1206	.7500	
78	143.2	3.225	2.825E-03	.0933	3.183E-03	.1051	3.162E-03	.1044	.7500	
79	195.2	9.926	9.108E-03	.3008	1.033E-02	.3410	9.864E-03	.3257	.8500	
80	148.9	6.165	5.524E-03	.1824	6.243E-03	.2062	5.976E-03	.1974	.8500	
81	155.0	5.115	4.526E-03	.1495	5.107E-03	.1687	4.907E-03	.1620	.8500	
83	178.5	5.100	8.224E-03	.2716	9.304E-03	.3073	8.888E-03	.2935	.9500	
84	169.4	5.621	8.628E-03	.2849	9.752E-03	.3220	9.370E-03	.3095	.9500	
85	149.7	5.172	4.556E-03	.1505	5.138E-03	.1497	5.095E-03	.1683	.9500	

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-210A

GROUP	CONFIG	MODEL	MACH NO	PU,PSIA	TU,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
51	1		7.96	324.3	1285	25.08	-4.92	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H= .0175FT)	STFR (H= .0175FT)	SWITCH POSITION	
94.0	.034	1.522	3701	3.064E-05	7.567E-08	1.531E-06	3.024E-02	3.290E-02	1	
GAGE	TW	COOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)/HREF	X/L	PHI	2Y/B
1	154.4	3.745	3.313E-03	.1095	3.738E-03	.1236	2.979E-03	.0985	.0050	0
2	209.5	15.379	1.430E-02	.4728	1.624E-02	.5370	1.468E-02	.4855	.0120	0
3	179.3	10.759	9.730E-03	.3218	1.101E-02	.3641	1.031E-02	.3410	.0200	0
4	160.5	8.171	7.266E-03	.2403	8.204E-03	.2713	7.915E-03	.2618	.0400	0
5	156.4	5.153	4.566E-03	.1510	5.153E-03	.1701	5.037E-03	.1666	.0600	0
6	150.4	4.161	3.668E-03	.1213	4.136E-03	.1368	4.082E-03	.1350	.0800	0
7	143.4	3.789	3.318E-03	.1098	3.740E-03	.1237	3.713E-03	.1228	.1000	0
8	131.5	3.566	3.091E-03	.1022	3.479E-03	.1150	3.477E-03	.1150	.1500	0
9	125.1	4.237	3.801E-03	.1257	4.294E-03	.1420	4.292E-03	.1419	.1500	0
10	174.6	3.162	2.847E-03	.0942	3.220E-03	.1065	3.218E-03	.1064	.1500	0
11	157.3	3.425	3.037E-03	.1004	3.427E-03	.1133	3.438E-03	.1137	.2000	0
12	135.3	2.244	1.952E-03	.0645	2.197E-03	.0727	2.203E-03	.0728	.2250	.1070
13	133.5	2.397	2.082E-03	.0688	2.344E-03	.0775	2.356E-03	.0779	.2500	0
14	138.9	2.392	2.087E-03	.0690	2.350E-03	.0777	2.365E-03	.0782	.2750	0
15	146.0	3.362	2.952E-03	.0976	3.327E-03	.1100	3.347E-03	.1107	.3000	0
16	154.1	3.514	3.107E-03	.1077	3.505E-03	.1159	3.527E-03	.1166	.3000	0
17	155.5	3.536	3.159E-03	.1044	3.568E-03	.1180	3.590E-03	.1187	.3000	0
18	151.1	2.089	1.842E-03	.0609	2.077E-03	.0687	2.090E-03	.0691	.3250	0
19	149.2	2.160	1.902E-03	.0629	2.144E-03	.0709	2.157E-03	.0713	.3500	0
20	146.3	2.111	1.854E-03	.0613	2.089E-03	.0691	2.102E-03	.0695	.4000	0
21	148.6	2.211	1.945E-03	.0643	2.193E-03	.0725	2.207E-03	.0730	.4500	.1070
22	145.2	2.136	1.874E-03	.0620	2.112E-03	.0698	2.124E-03	.0703	.5000	0
23	138.9	2.252	1.965E-03	.0650	2.213E-03	.0732	2.227E-03	.0736	.5500	0
24	143.8	2.100	1.840E-03	.0609	2.074E-03	.0686	2.086E-03	.0690	.6000	0
25	143.6	2.106	1.845E-03	.0610	2.080E-03	.0688	2.092E-03	.0692	.6500	.1070
26	140.5	2.117	1.850E-03	.0612	2.083E-03	.0689	2.096E-03	.0693	.7000	0
27	146.1	1.998	1.755E-03	.0580	1.978E-03	.0654	1.990E-03	.0658	.7500	.1070
28	145.7	2.073	1.819E-03	.0602	2.051E-03	.0654	2.063E-03	.0658	.8000	0
29	142.9	2.004	1.755E-03	.0580	1.977E-03	.0654	1.989E-03	.0658	.8500	0
30	149.2	1.885	1.659E-03	.0549	1.871E-03	.0619	1.882E-03	.0623	.9000	0
31	146.9	1.791	1.574E-03	.0520	1.774E-03	.0587	1.785E-03	.0590	.9500	.1070
32	154.6	1.834	1.623E-03	.0537	1.831E-03	.0605	1.842E-03	.0609	.1000	0
33	148.1	1.588	1.397E-03	.0462	1.575E-03	.0521	1.597E-03	.0526	.1070	0
34	147.5	1.493	1.313E-03	.0434	1.480E-03	.0489	1.501E-03	.0496	.1070	0
35	154.9	1.243	1.100E-03	.0364	1.241E-03	.0410	1.259E-03	.0416	.1070	0
36	148.5	1.249	1.099E-03	.0364	1.239E-03	.0410	1.262E-03	.0417	.1070	0
37	142.1	1.188	1.039E-03	.0344	1.171E-03	.0387	1.194E-03	.0395	.1070	0
38	159.6	1.542	1.370E-03	.0453	1.546E-03	.0511	1.578E-03	.0522	.2140	0

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-210A

GROUP	CONFID	MODEL	MACH NO	P0,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	HOLL MODEL	YAW
51	1		7.96	324.3	1285	25.0R	-4.92	30.00	n	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	H/FT (FT-1)	H-EF-FR (H= .0175FT) (H= .0175FT)	STFR (H= .0175FT) (H= .0175FT)	SWITCH POSITION
94.0	.034	1.522	3741	3.064E-05	7.567E-08	1.531E 06		3.024E-02	3.244E-02	1
GAGE	TW	COOF	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	H(TAW)/HREF	X/C	2Y/B
52	143.7	3.539	3.156E-03	.1044	3.564E-03	.1179	3.539E-03	.1170	.0420	.2500
53	140.5	2.643	2.350E-03	.0777	2.653E-03	.0877	2.653E-03	.0879	.3020	.2500
54	144.7	2.210	1.955E-03	.0646	2.209E-03	.0729	2.209E-03	.0730	.4470	.2500
55	148.9	1.941	1.704E-03	.0565	1.926E-03	.0637	1.931E-03	.0639	.5910	.2500
56	159.3	1.892	1.681E-03	.0556	1.897E-03	.0627	1.914E-03	.0633	.7360	.2500
57	158.5	1.759	1.562E-03	.0516	1.763E-03	.0583	1.782E-03	.0589	.8810	.2500
58	171.7	7.002	6.289E-03	.2090	7.110E-03	.2351	6.965E-03	.2303	.0500	.4000
59	162.1	5.148	4.585E-03	.1516	5.177E-03	.1712	5.114E-03	.1693	.1000	.4000
60	151.4	2.746	3.305E-03	.1093	3.727E-03	.1233	3.694E-03	.1223	.2000	.4000
61	142.2	3.208	2.807E-03	.0928	3.162E-03	.1046	3.144E-03	.1041	.3000	.4000
62	142.4	2.864	2.507E-03	.0829	2.825E-03	.0934	2.827E-03	.0935	.5600	.4000
63	137.8	3.156	2.751E-03	.0910	3.094E-03	.1025	3.113E-03	.1030	.7000	.4000
64	138.3	1.802	1.571E-03	.0520	1.769E-03	.0585	1.806E-03	.0597	.9000	.4000
65	161.9	5.222	4.650E-03	.1538	5.250E-03	.1736	5.227E-03	.1728	.1740	.5000
66	148.1	3.647	3.208E-03	.1061	3.617E-03	.1196	3.596E-03	.1189	.4840	.5000
67	138.0	2.532	2.432E-03	.0730	3.306E-03	.1093	3.318E-03	.1097	.7000	.5000
68	156.6	4.758	4.217E-03	.1395	2.486E-03	.0822	2.541E-03	.0840	.9000	.5000
69	145.4	3.772	3.310E-03	.1094	4.759E-03	.1574	4.732E-03	.1565	.1000	.6000
70	145.0	2.755	2.417E-03	.0749	3.730E-03	.1234	3.711E-03	.1227	.2000	.6000
71	138.1	3.291	2.870E-03	.0949	2.724E-03	.0901	2.704E-03	.0894	.4300	.6000
72	140.0	2.177	1.901E-03	.0629	3.232E-03	.1069	3.228E-03	.1067	.6000	.6000
73	142.7	2.237	1.958E-03	.0648	2.142E-03	.0708	2.169E-03	.0717	.8000	.6000
74	145.4	7.569	6.761E-03	.2236	2.207E-03	.0730	2.254E-03	.0745	.9000	.6000
75	154.4	4.648	4.111E-03	.1360	7.637E-03	.2526	7.585E-03	.2508	.1000	.7500
76	144.5	3.811	3.341E-03	.1105	4.638E-03	.1534	4.608E-03	.1524	.3000	.7500
77	144.6	3.171	2.780E-03	.0919	3.766E-03	.1245	3.747E-03	.1239	.5000	.7500
78	141.9	2.772	2.425E-03	.0802	3.134E-03	.1036	3.144E-03	.1041	.7000	.7500
79	171.3	6.688	7.802E-03	.2580	2.732E-03	.0903	2.789E-03	.0922	.9000	.7500
80	143.9	5.239	4.591E-03	.1518	8.819E-03	.2916	8.749E-03	.2893	.1000	.8500
81	140.2	5.502	8.448E-03	.2794	5.174E-03	.1711	5.134E-03	.1699	.3000	.8500
83	149.0	8.594	7.701E-03	.2547	9.633E-03	.3154	9.493E-03	.3139	.5000	.8500
84	143.4	4.539	3.976E-03	.1315	4.400E-03	.1482	4.463E-03	.1476	.1000	.9500
85	151.1	5.030	4.436E-03	.1467	5.003E-03	.1455	5.103E-03	.1687	.9000	.9500

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AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-21BA

GROUP	CONFIG	MODEL	MACH	NU	PU	PSIA	TO, DEG	R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
52	1		7.94		209.7		1279		30.09	.09	30.00	0	-0	
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SFC/FT2)	RE/FT (FT-1)	HREF-FR (H= .0175FT)	STFR (H= .0175FT)	SWITCH POSITION					
94.0	.023	.595	3772	2.013E-05	7.569E-08	1.003E 06	2.444E-02	4.056E-02	1					
GAGE	TW	GDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/L	PHI	2Y/B				
1	141.5	4.028	3.541E-03	.1449	3.990E-03	.1433	3.096E-03	.0050		0				
2	195.8	14.094	1.301E-02	.5324	1.475E-02	.6036	1.302E-02	.0120		0				
3	149.9	5.780	8.91E-03	.3608	9.997E-03	.4678	9.131E-03	.0200		0				
4	154.6	6.965	6.195E-03	.2535	6.990E-03	.2860	6.612E-03	.0400		0				
5	144.5	5.101	4.496E-03	.1840	5.068E-03	.2073	4.864E-03	.0600		0				
6	178.5	4.405	3.863E-03	.1581	4.351E-03	.1780	4.220E-03	.0800		0				
7	176.3	4.019	3.517E-03	.1439	3.900E-03	.1420	3.866E-03	.1000		0				
8	171.1	3.476	3.028E-03	.1239	3.408E-03	.1294	3.353E-03	.1500		0				
9	145.0	4.388	3.870E-03	.1583	4.362E-03	.1785	4.291E-03	.1750		0				
10	144.4	2.212	2.831E-03	.1158	3.191E-03	.1306	3.139E-03	.1284		0				
11	143.8	3.663	3.226E-03	.1320	3.636E-03	.1488	3.542E-03	.1470		0				
12	128.3	2.675	2.325E-03	.0951	2.615E-03	.1070	2.582E-03	.1056		0				
13	125.7	2.807	2.434E-03	.0996	2.737E-03	.1120	2.711E-03	.1109		0				
14	131.6	2.794	2.435E-03	.0996	2.741E-03	.1121	2.717E-03	.1112		0				
15	145.1	3.052	2.691E-03	.1101	3.033E-03	.1241	3.006E-03	.1230		0				
16	153.9	3.230	2.871E-03	.1175	3.240E-03	.1326	3.210E-03	.1314		0				
17	142.4	3.220	2.883E-03	.1180	3.256E-03	.1332	3.227E-03	.1320		0				
18	150.9	2.202	1.952E-03	.0794	2.201E-03	.0901	2.181E-03	.0892		0				
19	151.0	2.190	1.942E-03	.0794	2.190E-03	.0896	2.170E-03	.0888		0				
20	144.7	2.457	2.166E-03	.0886	2.442E-03	.0999	2.420E-03	.0990		0				
21	150.6	2.317	2.053E-03	.0840	2.316E-03	.0848	2.295E-03	.0839		0				
22	146.5	2.224	1.964E-03	.0804	2.214E-03	.0806	2.194E-03	.0800		0				
23	136.3	2.412	2.111E-03	.0864	2.377E-03	.0972	2.356E-03	.0964		0				
24	147.9	2.114	1.869E-03	.0765	2.108E-03	.0862	2.089E-03	.0855		0				
25	141.5	2.269	1.994E-03	.0816	2.247E-03	.0919	2.227E-03	.0911		0				
26	141.4	2.248	1.976E-03	.0809	2.227E-03	.0911	2.207E-03	.0903		0				
27	152.4	1.985	1.762E-03	.0721	1.988E-03	.0813	1.970E-03	.0806		0				
28	145.3	2.225	1.962E-03	.0803	2.212E-03	.0905	2.192E-03	.0897		0				
29	144.0	2.037	1.795E-03	.0734	2.022E-03	.0828	2.004E-03	.0820		0				
30	151.3	1.823	1.617E-03	.0662	1.824E-03	.0746	1.807E-03	.0739		0				
31	147.7	1.862	1.646E-03	.0674	1.856E-03	.0759	1.839E-03	.0753		0				
32	141.4	1.887	1.688E-03	.0691	1.898E-03	.0780	1.880E-03	.0773		0				
33	148.9	1.682	1.488E-03	.0609	1.678E-03	.0687	1.672E-03	.0684		0				
34	143.5	1.609	1.417E-03	.0580	1.597E-03	.0654	1.598E-03	.0654		0				
35	143.5	2.209	1.945E-03	.0796	2.192E-03	.0897	2.193E-03	.0897		0				
36	146.9	1.275	1.126E-03	.0461	1.270E-03	.0520	1.276E-03	.0522		0				
37	140.6	1.218	1.070E-03	.0438	1.205E-03	.0493	1.214E-03	.0497		0				
38	159.4	1.458	1.302E-03	.0533	1.470E-03	.0601	1.481E-03	.0606		0				
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AEDC(ARO-INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PO, PSTA	TO, DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
52	1		7.94	209.7	1279	30.09	.09	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LH-SEC/FT ²)	RE/FT (FT-1)	H(FTAW)/HREF (FT-1)	HREF-FH (R=.0175FT)	STFR (R=.0175FT)	SWITCH POSITION
94.0	.023	.595	3772	2.013E-05	7.549E-08	1.003E 06		2.444E-02	4.054E-02	1
GAGE	TW	QDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C	2Y/B	
52	174.1	3.085	2.792E-03	.1142	3.158E-03	.1292	3.081E-03	.1261	.0820	.2500
53	170.5	2.473	2.231E-03	.0913	2.522E-03	.1032	2.446E-03	.1017	.3020	.2500
54	141.0	2.073	1.854E-03	.0759	2.093E-03	.0857	2.063E-03	.0844	.4470	.2500
55	150.1	1.805	1.599E-03	.0654	1.804E-03	.0739	1.780E-03	.0728	.5910	.2500
56	143.2	1.949	1.747E-03	.0715	1.973E-03	.0907	1.961E-03	.0803	.7360	.2500
57	154.8	1.710	1.521E-03	.0622	1.716E-03	.0702	1.710E-03	.0700	.8810	.2500
58	164.6	5.618	5.041E-03	.2063	5.695E-03	.2330	5.476E-03	.2241	.0500	.4000
59	155.7	4.611	4.105E-03	.1680	4.633E-03	.1996	4.501E-03	.1842	.1000	.4000
60	143.8	3.572	3.146E-03	.1287	3.545E-03	.1451	3.559E-03	.1415	.2000	.4000
61	135.2	2.901	2.536E-03	.1038	2.856E-03	.1168	2.796E-03	.1144	.3000	.4000
62	144.4	2.462	2.170E-03	.0888	2.445E-03	.1001	2.409E-03	.0986	.5600	.4000
63	138.4	2.813	2.466E-03	.1009	2.777E-03	.1136	2.749E-03	.1125	.7000	.4000
64	130.1	1.901	1.654E-03	.0677	1.862E-03	.0762	1.877E-03	.0768	.9000	.4000
65	148.3	5.176	4.578E-03	.1673	5.162E-03	.2112	5.055E-03	.2068	.1760	.5000
66	141.9	3.402	2.992E-03	.1224	3.371E-03	.1379	3.296E-03	.1349	.4840	.5000
67	135.8	2.894	2.523E-03	.1032	2.841E-03	.1162	2.808E-03	.1149	.7000	.5000
68	128.7	2.389	2.077E-03	.0850	2.336E-03	.0956	2.358E-03	.0965	.9000	.5000
69	149.7	5.989	5.303E-03	.2170	5.981E-03	.2447	5.848E-03	.2393	.1000	.6000
70	139.8	4.966	4.384E-03	.1795	4.945E-03	.2023	4.838E-03	.1980	.2000	.6000
71	133.4	4.031	3.538E-03	.1448	3.946E-03	.1631	3.892E-03	.1592	.4300	.6000
72	127.2	2.889	2.521E-03	.1032	2.838E-03	.1161	2.790E-03	.1142	.6000	.6000
73	130.0	2.113	2.033E-03	.0832	2.287E-03	.0936	2.285E-03	.0935	.8000	.6000
74	152.3	7.355	6.524E-03	.2671	7.364E-03	.3013	7.191E-03	.2942	.9000	.7500
75	142.2	4.091	3.598E-03	.1472	4.055E-03	.1659	3.961E-03	.1621	.3000	.7500
76	135.0	3.601	3.148E-03	.1288	3.544E-03	.1450	3.469E-03	.1420	.5000	.7500
77	128.8	3.514	3.055E-03	.1250	3.437E-03	.1406	3.401E-03	.1392	.7000	.7500
78	125.7	2.552	2.213E-03	.0905	2.449E-03	.1018	2.409E-03	.1027	.9000	.7500
79	156.5	8.310	7.403E-03	.3029	8.355E-03	.3419	8.149E-03	.3334	.1000	.8500
80	143.1	5.631	4.958E-03	.2028	5.587E-03	.2286	5.456E-03	.2232	.3000	.8500
81	139.4	4.892	4.293E-03	.1757	4.834E-03	.1979	4.735E-03	.1937	.5000	.8500
83	154.6	6.760	6.012E-03	.2460	6.784E-03	.2776	6.612E-03	.2706	.1000	.9500
84	136.9	3.979	3.464E-03	.1425	3.923E-03	.1605	3.844E-03	.1573	.5000	.9500
85	140.5	5.508	4.838E-03	.1979	5.450E-03	.2230	5.487E-03	.2245	.9000	.9500

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL H
 VA352-21HA

GROUP	CONFIG	MODEL	MACH	NU	PU,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PHEBEND	ROLL	MODEL	YAW
53	1		7.94		210.2	1282	35.11	5.11	30.00	0	-0	
T-1NF (DEG R)	P-1NF (PSIA)	Q-1NF (PSIA)	V-1NF (FT/SEC)	RHO-1NF (SLUGS/FT ³)	WU-1NF (LB-SFC/FT ²)	RE/FT (FT-1)	HREF-FH (H=.0175FT)	STFR (H=.0175FT)	SWITCH			
94.2	.023	.99A	3776	2.013E-05	7.586E-08	1.002E 06	2.447E-02	4.05RE-02	1	X/L	PHI	2Y/B
GAGE	TW	CDOT	H(TO)	M(TO)/HREF	H(.9TO)	M(.9TO)/HREF	H(TAW)	HREF				
1	146.7	4.261	3.753E-03	.1534	4.231E-03	.1729	3.182E-03	.1300		.0050		0
4	205.8	13.930	1.294E-02	.5289	1.469E-02	.6005	1.261E-02	.5154		.0120		0
2	178.9	10.110	9.165E-03	.3745	1.037E-02	.4238	9.265E-03	.3786		.0200		0
3	140.0	7.849	6.995E-03	.2859	7.898E-03	.3228	7.307E-03	.2986		.0400		0
6	148.7	5.897	5.203E-03	.2126	5.867E-03	.2398	5.516E-03	.2254		.0600		0
7	143.0	5.105	4.482E-03	.1832	5.051E-03	.2064	4.805E-03	.1963		.0800		0
8	140.4	4.700	4.117E-03	.1683	4.638E-03	.1896	4.444E-03	.1816		.1000		0
10	137.4	3.720	3.250E-03	.1328	3.660E-03	.1496	3.537E-03	.1446		.1500		0
12	151.3	4.808	4.252E-03	.1738	4.796E-03	.1960	4.633E-03	.1893		.1500		0
13	148.8	3.268	2.883E-03	.1178	3.251E-03	.1329	3.141E-03	.1284		.1500		0
17	151.4	3.647	3.226E-03	.1318	3.638E-03	.1487	3.531E-03	.1443		.2000		0
19	132.6	3.214	2.797E-03	.1143	3.148E-03	.1286	3.054E-03	.1248		.2250		0
20	131.5	3.158	2.745E-03	.1122	3.089E-03	.1262	3.008E-03	.1229		.2500		0
22	137.6	3.152	2.754E-03	.1125	3.101E-03	.1267	3.022E-03	.1235		.2750		0
24	150.4	3.422	3.024E-03	.1236	3.111E-03	.1394	3.322E-03	.1358		.3000		0
25	159.2	3.582	3.190E-03	.1304	3.601E-03	.1472	3.507E-03	.1433		.3000		0
26	148.1	3.436	3.085E-03	.1261	3.486E-03	.1425	3.394E-03	.1387		.3000		0
29	154.0	2.737	2.426E-03	.0992	2.738E-03	.1119	2.666E-03	.1090		.3500		0
30	154.1	2.702	2.396E-03	.0979	2.703E-03	.1105	2.633E-03	.1076		.4000		0
31	149.5	2.643	2.334E-03	.0954	2.632E-03	.1076	2.564E-03	.1048		.4000		0
32	152.1	2.686	2.377E-03	.0971	2.681E-03	.1096	2.611E-03	.1067		.4000		0
33	149.4	2.524	2.229E-03	.0911	2.513E-03	.1027	2.448E-03	.1000		.4500		0
34	142.7	2.685	2.357E-03	.0963	2.655E-03	.1085	2.587E-03	.1057		.5000		0
35	149.0	2.385	2.105E-03	.0860	2.374E-03	.0970	2.312E-03	.0945		.5000		0
37	150.6	2.352	2.079E-03	.0850	2.344E-03	.0958	2.284E-03	.0933		.5000		0
38	150.4	2.404	2.124E-03	.0868	2.396E-03	.0979	2.334E-03	.0954		.6000		0
39	156.3	2.281	2.024E-03	.0828	2.287E-03	.0935	2.227E-03	.0910		.6000		0
40	152.0	2.332	2.064E-03	.0843	2.328E-03	.0951	2.268E-03	.0927		.6500		0
41	150.1	2.313	2.043E-03	.0835	2.304E-03	.0942	2.244E-03	.0917		.7000		0
43	158.3	2.190	1.949E-03	.0796	2.200E-03	.0899	2.142E-03	.0875		.7500		0
44	153.6	2.036	1.804E-03	.0737	2.035E-03	.0832	1.982E-03	.0810		.8000		0
45	145.6	2.032	1.820E-03	.0744	2.056E-03	.0840	2.002E-03	.0818		.8000		0
46	155.0	.986	8.745E-04	.0357	9.867E-04	.0403	9.665E-04	.0395		.8500		0
47	143.9	2.024	1.778E-03	.0727	2.004E-03	.0819	1.973E-03	.0806		.9000		0
48	146.1	2.369	2.086E-03	.0852	2.351E-03	.0961	2.314E-03	.0946		.9000		0
49	146.0	1.493	1.314E-03	.0537	1.481E-03	.0605	1.465E-03	.0599		.9500		0
50	142.0	1.368	1.200E-03	.0490	1.352E-03	.0552	1.342E-03	.0546		1.0000		0
51	160.1	1.593	1.420E-03	.0580	1.603E-03	.0655	1.591E-03	.0650		1.0000		0
												.2140

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP	CONFIG	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
53	1		7.94	210.2	1282	35.11	5.11	30.00	0	-0	
T-INF (DEG R)	P-INF (PSIA)	O-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	HE/FT (FT-1)	HREF-FH (HREF=.0175FT) (HREF=.0175FT) POSITION	SIFH (HREF=.0175FT) (HREF=.0175FT) POSITION	SWITCH		
94.2	.023	.998	3776	2.013E-05	7.586E-08	1.002E 06	2.447E-02	4.056E-02	1		
GAGE	TM	COOT	H(TO)	H(TO)/HREF	H(1.9TO)	H(1.9TO)/HREF	H(TAW)	X/C		2Y/B	
52	173.4	3.338	3.011E-03	.1231	3.405E-03	.1392	3.260E-03	.0820		.2500	
53	145.8	2.802	2.510E-03	.1026	2.836E-03	.1159	2.746E-03	.3020		.2500	
54	163.5	2.245	2.007E-03	.0820	2.267E-03	.0927	2.194E-03	.4870		.2500	
55	154.3	2.132	1.890E-03	.0772	2.133E-03	.0872	2.068E-03	.5910		.2500	
56	144.0	2.220	1.986E-03	.0811	2.243E-03	.0917	2.192E-03	.7360		.2500	
57	154.3	2.095	1.858E-03	.0759	2.096E-03	.0857	2.054E-03	.8810		.2500	
58	149.6	5.352	4.811E-03	.1966	5.438E-03	.2222	5.122E-03	.2093		.4000	
59	142.4	4.487	4.007E-03	.1638	4.526E-03	.1949	4.311E-03	.1762		.4000	
60	151.1	3.639	3.217E-03	.1315	3.629E-03	.1483	3.473E-03	.1419		.4000	
61	141.3	3.189	2.796E-03	.1143	3.150E-03	.1287	3.028E-03	.1237		.4000	
62	141.7	2.709	2.376E-03	.0971	2.677E-03	.1094	2.591E-03	.1059		.4000	
63	141.5	2.512	2.203E-03	.0900	2.482E-03	.1014	2.414E-03	.0987		.4000	
64	126.2	2.384	2.063E-03	.0843	2.320E-03	.0948	2.305E-03	.0942		.4000	
65	154.3	4.563	4.061E-03	.1660	4.584E-03	.1973	4.405E-03	.1740		.5000	
66	137.9	3.721	3.252E-03	.1329	3.663E-03	.1497	3.516E-03	.1437		.5000	
67	136.5	2.933	2.560E-03	.1046	2.883E-03	.1178	2.801E-03	.1145		.5000	
68	126.5	2.656	2.299E-03	.0939	2.586E-03	.1057	2.573E-03	.1051		.5000	
69	151.8	5.398	4.776E-03	.2249	6.216E-03	.2540	5.962E-03	.2437		.6000	
70	140.7	4.429	3.881E-03	.1952	5.378E-03	.2202	5.173E-03	.2114		.6000	
71	133.6	3.622	3.154E-03	.1586	4.372E-03	.1787	4.190E-03	.1712		.6000	
72	132.5	2.682	2.333E-03	.1289	3.550E-03	.1451	3.428E-03	.1401		.6000	
73	130.9	2.909	2.528E-03	.0953	2.626E-03	.1073	2.581E-03	.1055		.6000	
74	145.4	7.606	6.812E-03	.2784	7.695E-03	.3145	7.370E-03	.3012		.7500	
75	143.8	4.481	3.937E-03	.1609	4.437E-03	.1813	4.254E-03	.1738		.7500	
76	138.8	3.755	3.284E-03	.1342	3.699E-03	.1512	3.555E-03	.1453		.7500	
77	134.5	3.350	2.919E-03	.1193	3.286E-03	.1343	3.196E-03	.1306		.7500	
78	128.6	2.898	2.513E-03	.1027	2.827E-03	.1155	2.809E-03	.1148		.7500	
79	145.5	1.473	6.693E-03	.2735	7.561E-03	.3090	7.233E-03	.2956		.8500	
80	148.8	5.145	4.540E-03	.1856	5.120E-03	.2092	4.906E-03	.2005		.8500	
81	140.5	4.475	3.920E-03	.1602	4.416E-03	.1805	4.245E-03	.1735		.8500	
83	155.5	5.928	5.262E-03	.2151	5.938E-03	.2427	5.678E-03	.2321		.9500	
84	146.3	5.692	5.012E-03	.2048	5.650E-03	.2309	5.434E-03	.2221		.9500	
85	137.8	3.738	3.267E-03	.1335	3.679E-03	.1504	3.650E-03	.1491		.9500	

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP	CONFIG	MODEL	MACH NO	PO-PSIA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
54	1		7.94	210.5	1283	25.13	-4.87	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (R=.0175FT)	STFR (R=.0175FT)	SWITCH POSITION	
94.3	.023	.599	3778	2.015E-05	7.590E-08	1.003F 06	2.449E-02	4.055E-02	1	
GAGE	TW	GDOT	H1(TO)	H1(TO)/HREF	H1(.9TO)	H1(.9TO)/HREF	H(TAW)/HREF	X/L	PHI	2Y/R
1	135.5	3.349	2.936E-03	.1199	3.306E-03	.1350	2.644E-03	.1079	.0050	0
4	197.7	13.330	1.217E-02	.4969	1.378E-02	.5629	1.249E-02	.5098	.0120	0
2	141.5	9.235	8.234E-03	.3362	9.298E-03	.3797	8.716E-03	.3559	.0200	0
3	146.0	6.591	5.797E-03	.2367	6.534E-03	.2668	6.306E-03	.2575	.0400	0
6	137.9	4.687	4.093E-03	.1671	4.610E-03	.182	4.507E-03	.1841	.0600	0
7	133.1	3.884	3.377E-03	.1379	3.802E-03	.1552	3.752E-03	.1532	.0800	0
8	128.8	3.521	3.050E-03	.1246	3.432E-03	.1401	3.406E-03	.1391	.1000	0
10	125.1	2.730	2.358E-03	.0963	2.652E-03	.1083	2.650E-03	.1082	.1500	0
12	140.3	3.836	3.357E-03	.1371	3.782E-03	.1544	3.779E-03	.1543	.1500	0
13	144.0	2.909	2.633E-03	.1075	2.968E-03	.1212	2.966E-03	.1211	.1500	0
17	140.0	3.046	2.665E-03	.1088	3.001E-03	.1266	3.011E-03	.1229	.2000	0
19	126.8	1.933	1.672E-03	.0683	1.881E-03	.0768	1.885E-03	.0770	.2250	0
20	135.9	2.044	1.767E-03	.0721	1.987E-03	.0811	1.997E-03	.0815	.2500	0
22	132.2	2.088	1.814E-03	.0741	2.042E-03	.0834	2.054E-03	.0839	.2750	0
24	137.3	2.809	2.452E-03	.1001	2.761E-03	.1127	2.777E-03	.1134	.3000	0
25	145.0	2.846	2.501E-03	.1021	2.818E-03	.1151	2.835E-03	.1158	.3000	0
26	145.4	3.018	2.677E-03	.1093	3.021E-03	.1233	3.039E-03	.1241	.3000	0
29	144.8	1.837	1.614E-03	.0659	1.819E-03	.0743	1.830E-03	.0747	.3000	0
30	143.0	1.894	1.661E-03	.0678	1.872E-03	.0764	1.883E-03	.0769	.3500	0
31	141.4	1.787	1.566E-03	.0639	1.764E-03	.0720	1.774E-03	.0725	.4000	0
32	143.9	1.843	1.618E-03	.0660	1.823E-03	.0744	1.834E-03	.0749	.4000	0
33	142.9	1.752	1.537E-03	.0627	1.732E-03	.0707	1.742E-03	.0711	.4500	0
34	137.5	1.801	1.572E-03	.0642	1.770E-03	.0723	1.781E-03	.0727	.4500	0
35	143.7	1.723	1.512E-03	.0618	1.704E-03	.0696	1.714E-03	.0700	.5000	0
37	142.3	1.684	1.476E-03	.0603	1.633E-03	.0679	1.643E-03	.0683	.5000	0
38	139.0	1.760	1.539E-03	.0628	1.733E-03	.0708	1.743E-03	.0712	.5500	0
39	146.2	1.659	1.459E-03	.0596	1.645E-03	.0672	1.655E-03	.0676	.6000	0
40	144.0	1.730	1.519E-03	.0620	1.712E-03	.0699	1.722E-03	.0703	.6000	0
41	140.0	1.651	1.444E-03	.0590	1.627E-03	.0664	1.637E-03	.0668	.6500	0
43	146.3	1.584	1.393E-03	.0569	1.571E-03	.0641	1.580E-03	.0645	.7000	0
44	143.7	1.536	1.348E-03	.0551	1.520E-03	.0620	1.528E-03	.0624	.7500	0
45	152.2	1.733	1.532E-03	.0626	1.728E-03	.0706	1.739E-03	.0710	.8000	0
46	145.0	1.305	1.226E-03	.0501	1.322E-03	.0564	1.336E-03	.0570	.8000	0
47	145.5	-92.916	8.168E-02	-3.3354	-9.207E-02	-3.7595	-9.336E-02	.8500	.1070	0
48	154.6	-7.806	-6.918E-03	-.2825	-7.806E-03	-.3187	-7.941E-03	.9000	0	0
49	146.7	1.036	9.114E-04	.0372	1.027E-03	.0420	1.046E-03	.9000	0	0
50	139.8	.922	8.065E-04	.0329	9.085E-04	.0371	9.267E-04	.9500	0	0
51	156.8	1.154	1.025E-03	.0419	1.157E-03	.0472	1.180E-03	.10000	0	0
								.0482	.2140	0

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AEDC(AHO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-21BA

GROUP	CONFIG	MODEL	MACH NO	PU,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
54	1		7.94	210.5	1283	25.13	-4.87	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (R=.0175FT)	STFH (R=.0175FT)	SWITCH POSITION	2Y/B
94.3	.023	.599	778	2.015E-05	7.590E-06	1.003E-06	2.449E-02	4.055E-02	1	
GAGE	TW	QDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C		
52	159.7	3.607	2.677E-03	.1093	3.022E-03	.1234	3.001E-03	.1225	.0820	.2500
53	158.9	2.191	1.950E-03	.0796	2.201E-03	.0899	2.204E-03	.0900	.3020	.2500
54	155.0	1.778	1.577E-03	.0644	1.779E-03	.0726	1.741E-03	.0727	.4470	.2500
55	146.6	1.578	1.389E-03	.0567	1.566E-03	.0639	1.569E-03	.0641	.5910	.2500
56	156.5	1.594	1.415E-03	.0578	1.597E-03	.0652	1.611E-03	.0658	.7360	.2500
57	155.1	1.387	1.230E-03	.0502	1.388E-03	.057	1.403E-03	.0573	.8810	.2500
58	163.2	5.895	5.265E-03	.2150	5.946E-03	.2428	5.825E-03	.2379	.0500	.4000
59	154.8	4.473	3.965E-03	.1619	4.473E-03	.1827	4.422E-03	.1806	.1000	.4000
60	144.6	3.282	2.803E-03	.1177	3.249E-03	.1327	3.223E-03	.1316	.2000	.4000
61	136.8	2.483	2.167E-03	.0845	2.440E-03	.0996	2.428E-03	.0991	.3000	.4000
62	136.3	2.444	2.132E-03	.0870	2.400E-03	.0980	2.402E-03	.0981	.5600	.4000
63	135.9	2.329	2.030E-03	.0829	2.286E-03	.0933	2.297E-03	.0938	.7000	.4000
64	129.0	1.424	1.234E-03	.0504	1.388E-03	.0567	1.416E-03	.0578	.9000	.4000
65	153.2	4.394	3.869E-03	.1588	4.387E-03	.1791	4.367E-03	.1783	.1760	.5000
66	140.6	3.070	2.687E-03	.1097	3.027E-03	.1236	3.009E-03	.1229	.4840	.5000
67	140.3	2.781	2.434E-03	.0994	2.742E-03	.1120	2.752E-03	.1124	.7000	.5000
68	145.7	2.041	1.767E-03	.0721	1.988E-03	.0812	2.031E-03	.0829	.9000	.5000
69	141.6	3.152	3.740E-03	.1527	4.215E-03	.1721	4.191E-03	.1711	.1000	.6000
70	148.9	2.467	2.762E-03	.1128	3.111E-03	.1270	3.095E-03	.1264	.2000	.6000
71	144.3	2.467	2.762E-03	.1128	3.111E-03	.1270	3.095E-03	.1264	.2000	.6000
72	133.9	2.768	2.410E-03	.0984	2.713E-03	.1108	2.709E-03	.1106	.4300	.6000
73	132.2	1.817	1.579E-03	.0704	1.941E-03	.0792	1.965E-03	.0802	.8000	.6000
74	154.6	6.106	5.411E-03	.2210	6.105E-03	.2493	6.063E-03	.2476	.9000	.6000
75	144.3	3.163	2.778E-03	.1114	3.130E-03	.1278	3.109E-03	.1270	.1000	.7500
76	136.9	3.127	2.728E-03	.1134	3.102E-03	.1254	3.075E-03	.1248	.3000	.7500
77	132.6	2.710	2.356E-03	.0962	2.651E-03	.1083	2.663E-03	.1087	.5000	.7500
78	129.6	2.329	2.019E-03	.0825	2.272E-03	.0928	2.318E-03	.0947	.7000	.7500
79	150.2	7.306	6.507E-03	.2657	7.347E-03	.3000	7.248E-03	.2976	.9000	.8500
80	138.6	4.069	3.556E-03	.1452	4.005E-03	.1635	3.977E-03	.1624	.1000	.8500
81	132.3	3.748	3.257E-03	.1330	3.665E-03	.1497	3.648E-03	.1490	.5000	.8500
82	159.1	7.494	6.667E-03	.2722	7.526E-03	.3073	7.462E-03	.3047	.1000	.9500
83	131.7	3.684	3.200E-03	.1307	3.602E-03	.1471	3.587E-03	.1465	.5000	.9500
84	128.5	2.842	2.462E-03	.1005	2.769E-03	.1131	2.823E-03	.1153	.9000	.9500

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

VA352-218A																		
GROUP	CONFIG	MODEL	MACH	NU	PO+PSIA	TO+DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW						
55	1		7.99		545.6	1321	30.14	.14	30.00	0	-0							
T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (R=.0175FT)	STFR (R=.0175FT)	SWITCH									
95.9	.056	2.51R	3835	4.928E-05	7.724E-08	2.446E-06	3.908E-02	2.601E-02	1									
GAGE	TW	QDOT	H1TO	H(TO)/HREF	M(.9TO)	M(.9TO)/HREF	M(TAW)/HREF	X/L	PHI	2Y/8								
1	143.6	6.071	5.245E-03	.1342	5.921E-03	.1515	4.575E-03	.1171	.0050	0								
4	240.6	20.022	1.853E-02	.4742	2.111E-02	.5403	1.854E-02	.4745	.0120	0								
2	246.8	14.815	1.330E-02	.3402	1.508E-02	.3860	1.378E-02	.3526	.0200	0								
3	192.3	10.520	9.238E-03	.2364	1.045E-02	.2674	9.871E-03	.2526	.0400	0								
6	167.8	8.078	7.005E-03	.1792	7.911E-03	.2024	7.586E-03	.1941	.0600	0								
7	150.2	6.886	5.932E-03	.1518	6.694E-03	.1713	6.449E-03	.1660	.0800	0								
8	157.6	6.311	5.425E-03	.1348	6.120E-03	.1566	5.971E-03	.1628	.1000	0								
10	148.9	5.019	4.282E-03	.1096	4.826E-03	.1235	4.747E-03	.1215	.1500	0								
12	149.4	6.652	5.776E-03	.1478	6.524E-03	.1669	6.415E-03	.1641	.1500	0								
13	167.7	4.765	4.132E-03	.1057	4.666E-03	.1194	4.588E-03	.1174	.1500	0								
17	144.8	5.045	4.363E-03	.1116	4.926E-03	.1261	4.864E-03	.1245	.2000	.1070								
19	146.2	3.943	3.357E-03	.0859	3.782E-03	.0968	3.732E-03	.0955	.2250	0								
20	146.4	3.823	3.255E-03	.0833	3.667E-03	.0938	3.631E-03	.0929	.2500	0								
22	153.0	3.989	3.415E-03	.0874	3.851E-03	.0985	3.815E-03	.0976	.2750	0								
24	162.6	4.752	4.102E-03	.1050	4.630E-03	.1185	4.587E-03	.1174	.3000	0								
25	169.1	4.943	4.291E-03	.1098	4.847E-03	.1240	4.802E-03	.1229	.3000	34.0000								
26	179.7	4.983	4.362E-03	.1116	4.932E-03	.1262	4.896E-03	.1250	.3000	40.0000								
29	169.7	3.293	2.860E-03	.0732	3.230E-03	.0927	3.200E-03	.0819	.3250	45.0000								
30	169.3	2.638	2.291E-03	.0586	2.587E-03	.0662	2.563E-03	.0656	.3500	0								
31	143.9	3.483	3.010E-03	.0770	3.398E-03	.0869	3.366E-03	.0861	.4000	0								
32	143.3	3.616	3.123E-03	.0799	3.525E-03	.0902	3.493E-03	.0894	.4000	0								
33	157.7	3.801	3.267E-03	.0836	3.686E-03	.0943	3.652E-03	.0934	.4500	.1070								
34	150.1	3.826	3.267E-03	.0836	3.686E-03	.0942	3.649E-03	.0934	.5000	0								
35	158.3	3.317	2.853E-03	.0730	3.218E-03	.0824	3.189E-03	.0816	.5000	0								
37	154.0	3.427	2.936E-03	.0751	3.311E-03	.0847	3.281E-03	.0839	.5500	.1070								
38	155.3	3.383	2.902E-03	.0743	3.273E-03	.0837	3.242E-03	.0830	.5500	0								
39	151.6	3.188	2.750E-03	.0704	3.103E-03	.0794	3.074E-03	.0787	.6000	0								
40	150.0	3.401	2.929E-03	.0750	3.305E-03	.0846	3.275E-03	.0838	.6000	.1070								
41	159.9	3.450	2.971E-03	.0760	3.333E-03	.0858	3.322E-03	.0850	.6500	0								
43	166.1	3.413	2.955E-03	.0756	3.337E-03	.0854	3.322E-03	.0850	.7000	0								
44	166.1	3.770	3.265E-03	.0835	3.686E-03	.0943	3.666E-03	.0846	.7500	0								
45	177.3	3.495	3.056E-03	.0782	3.455E-03	.0843	3.452E-03	.0876	.8000	0								
46	171.9	3.895	3.390E-03	.0867	3.830E-03	.0980	3.814E-03	.0476	.8000	.1070								
47	167.7	4.196	3.629E-03	.0929	4.099E-03	.1049	4.099E-03	.1049	.8500	0								
48	163.1	4.648	4.014E-03	.1027	4.531E-03	.1159	4.532E-03	.1160	.9000	0								
49	169.5	4.226	3.670E-03	.0939	4.146E-03	.1061	4.165E-03	.1066	.9000	.1070								
50	165.4	4.727	4.090E-03	.1047	4.618E-03	.1182	4.652E-03	.1190	.9500	0								
51	177.9	4.184	3.660E-03	.0937	4.138E-03	.1059	4.169E-03	.1067	1.0000	0								
										.2140								

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP	CONFID	MODEL	MACH NO	PO,PSIA	TO,DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
55	1		7.99	545.6	1321	30.14	.14	30.00	0	-0	
T-INF DEG R	P-INF (PSIA)	O-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FR (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION	2Y/B	
95.9	.056	2.518	.335	4.928E-05	7.724E-08	2.446E-06	3.908E-02	2.601E-02	1		
GAGE	TW	CDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C			
52	192.2	4.817	4.230E-03	.1082	4.785E-03	.1224	4.669E-03	.1195		.2500	
53	179.1	3.940	3.451E-03	.0883	3.902E-03	.0999	3.846E-03	.0984		.2500	
54	169.5	3.289	2.856E-03	.0731	3.226E-03	.0826	3.179E-03	.0813		.2500	
55	165.1	2.997	2.593E-03	.0664	2.928E-03	.0749	2.889E-03	.0739		.2500	
56	182.0	3.587	3.149E-03	.0806	3.562E-03	.0912	3.504E-03	.0906		.2500	
57	176.2	3.829	3.345E-03	.0856	3.781E-03	.0964	3.767E-03	.0964		.2500	
58	169.5	8.351	7.380E-03	.1888	8.356E-03	.2138	8.028E-03	.2054		.4000	
59	177.5	7.056	6.171E-03	.1579	6.977E-03	.1785	6.774E-03	.1733		.4000	
60	166.8	5.384	4.664E-03	.1194	5.267E-03	.1348	5.135E-03	.1314		.4000	
61	150.2	4.218	3.602E-03	.0922	4.061E-03	.1039	3.974E-03	.1017		.4000	
62	168.6	4.295	3.727E-03	.0954	4.210E-03	.1077	4.145E-03	.1061		.4000	
63	166.2	4.177	3.617E-03	.0925	4.084E-03	.1045	4.040E-03	.1034		.4000	
64	153.1	3.577	3.062E-03	.0784	3.453E-03	.0884	3.480E-03	.0891		.4000	
65	177.6	7.605	6.651E-03	.1702	7.520E-03	.1924	7.359E-03	.1883		.5000	
66	169.4	5.732	4.977E-03	.1274	5.622E-03	.1439	5.494E-03	.1406		.5000	
67	155.6	4.514	3.907E-03	.1000	4.411E-03	.1129	4.358E-03	.1115		.5000	
68	153.6	3.967	3.398E-03	.0870	3.832E-03	.0981	3.868E-03	.0990		.5000	
69	182.0	9.464	8.309E-03	.2126	9.399E-03	.2405	9.183E-03	.2350		.6000	
70	170.0	6.644	5.772E-03	.1642	7.257E-03	.1857	7.094E-03	.1815		.6000	
71	158.5	4.680	4.026E-03	.1030	4.521E-03	.1169	4.462E-03	.1142		.6000	
72	151.8	3.408	2.915E-03	.0746	3.286E-03	.0841	3.282E-03	.0840		.6000	
73	155.3	3.386	2.905E-03	.0743	3.276E-03	.0838	3.304E-03	.0846		.6000	
74	214.1	16.457	1.487E-02	.3804	1.688E-02	.4320	1.646E-02	.4212		.7500	
75	171.1	6.488	5.643E-03	.1444	6.375E-03	.1631	6.224E-03	.1593		.7500	
76	166.2	5.238	4.536E-03	.1161	5.122E-03	.1311	5.011E-03	.1282		.7500	
77	158.7	4.533	3.900E-03	.0998	4.400E-03	.1126	4.353E-03	.1114		.7500	
78	157.1	3.724	3.200E-03	.0819	3.610E-03	.0924	3.639E-03	.0931		.7500	
79	200.9	11.845	1.057E-02	.2706	1.199E-02	.3068	1.168E-02	.2989		.8500	
80	214.6	16.739	1.513E-02	.3871	1.718E-02	.4396	1.675E-02	.4286		.8500	
81	204.3	16.794	1.504E-02	.3848	1.706E-02	.4364	1.668E-02	.4268		.8500	
83	185.9	10.033	8.839E-03	.2262	1.000E-02	.2560	9.742E-03	.2493		.9500	
84	185.4	11.488	1.012E-02	.2589	1.145E-02	.2929	1.121E-02	.2868		.9500	
85	187.4	11.616	1.025E-02	.2622	1.160E-02	.2968	1.168E-02	.2988		.9500	

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VA352-218A

GROUP	CONFIG	MODEL	MACH	NU	PU-PSIA	TO-DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	HOLL	MODEL	YAW
56	1		7.99		544.9	1318	35.19	5.19	30.00	0		-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (R= .0175FT)	STFR (R= .0175FT)	SWITCH POSITION			
95.7	.056	2.51	3830	4.933E-05	7.705E-08	2.452E 06	3.904E-02	2.599E-02	1			
GAGE	TW	CDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/L	PHI	2Y/R		
1	193.7	5.763	5.126E-03	.1313	5.807E-03	.1487	4.319E-03	.1106	.0050	0		
4	241.5	19.570	1.852E-02	.4745	2.116E-02	.5421	1.802E-02	.4615	.0120	0		
2	299.7	14.469	1.329E-02	.3405	1.513E-02	.3875	1.344E-02	.3443	.0200	0		
3	291.8	10.795	9.671E-03	.2477	1.097E-02	.2809	1.011E-02	.2591	.0400	0		
6	182.2	8.904	7.919E-03	.2028	8.958E-03	.2295	8.405E-03	.2153	.0600	0		
7	173.6	7.763	6.783E-03	.1738	7.666E-03	.1964	7.281E-03	.1865	.0800	0		
8	172.3	7.305	6.376E-03	.1633	7.205E-03	.1846	6.892E-03	.1765	.1000	0		
10	172.5	5.343	4.664E-03	.1195	5.270E-03	.1350	5.087E-03	.1303	.1500	0		
12	204.3	6.371	5.721E-03	.1465	6.488E-03	.1662	6.255E-03	.1602	.1500	0		
13	203.3	4.181	3.751E-03	.0961	4.254E-03	.1090	4.101E-03	.1051	.1500	0		
17	195.7	5.055	4.505E-03	.1154	5.104E-03	.1307	4.946E-03	.1267	.2000	0		
19	156.5	4.932	4.246E-03	.1084	4.790E-03	.1227	4.642E-03	.1189	.2250	.1070		
20	156.7	4.854	4.180E-03	.1071	4.715E-03	.1208	4.587E-03	.1175	.2500	0		
22	153.0	4.793	4.150E-03	.1063	4.685E-03	.1200	4.561E-03	.1168	.2750	0		
24	184.0	4.978	4.390E-03	.1125	4.967E-03	.1272	4.834E-03	.1238	.3000	0		
25	193.7	5.050	4.492E-03	.1151	5.088E-03	.1303	4.950E-03	.1268	.3000	0		
26	203.2	5.036	4.518E-03	.1157	5.123E-03	.1312	4.983E-03	.1276	.3000	0		
29	181.3	3.807	3.349E-03	.0858	3.789E-03	.0970	3.687E-03	.0944	.3250	0		
30	182.2	3.409	3.001E-03	.0769	3.396E-03	.0870	3.304E-03	.0846	.3500	0		
31	175.2	3.852	3.371E-03	.0863	3.810E-03	.0976	3.708E-03	.0950	.4000	0		
32	176.4	3.949	3.459E-03	.0886	3.911E-03	.1002	3.806E-03	.0975	.4000	.1070		
33	167.9	3.953	3.437E-03	.0880	3.882E-03	.0994	3.779E-03	.0968	.4500	0		
34	160.5	4.381	3.785E-03	.0970	4.271E-03	.1094	4.159E-03	.1065	.5000	0		
35	168.7	3.669	3.192E-03	.0818	3.606E-03	.0924	3.510E-03	.0899	.5000	0		
37	162.4	3.901	3.376E-03	.0865	3.811E-03	.0976	3.710E-03	.0950	.5500	.1070		
38	145.2	3.969	3.443E-03	.0882	3.887E-03	.0996	3.784E-03	.0969	.6000	0		
39	175.1	3.562	3.116E-03	.0798	3.523E-03	.0902	3.429E-03	.0878	.6000	.1070		
40	171.4	3.985	3.475E-03	.0890	3.927E-03	.1006	3.822E-03	.0979	.6500	0		
41	177.2	4.161	3.648E-03	.0934	4.124E-03	.1056	4.014E-03	.1028	.7000	0		
43	181.6	3.872	3.407E-03	.0873	3.854E-03	.0987	3.750E-03	.0961	.7500	0		
44	181.5	4.793	4.217E-03	.1080	4.770E-03	.1222	4.642E-03	.1189	.8000	0		
45	191.8	4.585	4.071E-03	.1043	4.611E-03	.1181	4.486E-03	.1149	.8000	.1070		
46	187.3	5.183	4.584E-03	.1174	5.189E-03	.1329	5.074E-03	.1301	.8500	0		
47	182.5	5.723	5.040E-03	.1291	5.702E-03	.1461	5.609E-03	.1437	.9000	0		
48	178.8	5.786	5.079E-03	.1301	5.744E-03	.1471	5.650E-03	.1447	.9000	.1070		
49	186.1	5.799	5.123E-03	.1312	5.798E-03	.1485	5.732E-03	.1468	.9500	0		
50	186.4	6.480	5.726E-03	.1467	6.481E-03	.1660	6.429E-03	.1647	1.0000	0		
51	198.4	5.838	5.214E-03	.1336	5.910E-03	.1514	5.862E-03	.1501	1.0000	.2140		

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-21BA

GROUP	CONFID	MODEL	MACH NO	PO+PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL MODEL	YAW
56	1		7.99	544.9	1318	35.19	5.19	30.00	0	-0
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT ³)	MU-INF (LB-SEC/FT ²)	RE/FT (FT-1)	HREF-FH (H=.0175FT)	STFR (H=.0175FT)	SWITCH POSITION	
95.7	.056	2.515	3430	4.933E-05	7.705E-08	2.452E 06	3.904E-02	2.599E-02	1	
GAGE	TM	QDOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C	2Y/B	
52	197.4	4.903	4.375E-03	.1121	4.958E-03	.1270	4.741E-03	.0820	.2500	
53	199.3	4.137	3.665E-03	.0939	4.150E-03	.1063	4.015E-03	.3020	.2500	
54	196.2	3.443	3.042E-03	.0779	3.443E-03	.0892	3.329E-03	.4470	.2500	
55	194.0	3.485	3.073E-03	.0787	3.477E-03	.0891	3.368E-03	.5910	.2500	
56	194.0	4.623	4.113E-03	.1054	4.660E-03	.1194	4.550E-03	.7360	.2500	
57	190.0	5.225	4.632E-03	.1186	5.245E-03	.1343	5.135E-03	.8810	.2500	
58	204.9	7.554	6.787E-03	.1738	7.698E-03	.1972	7.235E-03	.0500	.4000	
59	197.5	6.341	5.659E-03	.1450	6.413E-03	.1643	6.098E-03	.1000	.4000	
60	197.2	5.295	4.682E-03	.1199	5.300E-03	.1358	5.064E-03	.1297	.4000	
61	168.6	5.006	4.355E-03	.1116	4.919E-03	.1260	4.723E-03	.1210	.4000	
62	175.2	4.960	4.340E-03	.1112	4.906E-03	.1257	4.741E-03	.1214	.4000	
63	177.5	4.891	4.290E-03	.1099	4.850E-03	.1242	4.713E-03	.1207	.4000	
64	159.2	5.488	4.736E-03	.1213	5.344E-03	.1369	5.306E-03	.1359	.4000	
65	198.3	6.644	5.934E-03	.1520	6.726E-03	.1723	6.451E-03	.1653	.5000	
66	173.6	5.661	4.947E-03	.1267	5.591E-03	.1432	5.359E-03	.1373	.5000	
67	173.5	4.830	4.220E-03	.1081	4.769E-03	.1222	4.627E-03	.1185	.5000	
68	165.0	4.796	4.160E-03	.1066	4.697E-03	.1203	4.672E-03	.1197	.5000	
69	211.1	5.325	8.424E-03	.2158	9.562E-03	.2449	9.153E-03	.2344	.6000	
69	191.8	7.951	7.060E-03	.1808	7.996E-03	.2048	7.664E-03	.1963	.6000	
70	174.1	7.073	6.184E-03	.1584	6.989E-03	.1790	6.688E-03	.1713	.6000	
71	164.7	5.890	5.107E-03	.1308	5.766E-03	.1477	5.561E-03	.1424	.6000	
72	165.9	4.327	3.756E-03	.0962	4.241E-03	.1086	4.166E-03	.1067	.6000	
73	162.7	4.841	4.191E-03	.1073	4.730E-03	.1212	4.702E-03	.1204	.6000	
74	211.2	10.820	9.776E-03	.2504	1.110E-02	.2843	1.061E-02	.2717	.6000	
75	176.6	7.021	6.152E-03	.1576	6.955E-03	.1782	6.659E-03	.1706	.7500	
76	175.6	5.566	4.872E-03	.1248	5.508E-03	.1411	5.285E-03	.1354	.7500	
77	171.4	4.909	4.241E-03	.1097	4.837E-03	.1239	4.700E-03	.1204	.7500	
78	163.6	4.248	3.680E-03	.0943	4.154E-03	.1064	4.126E-03	.1057	.7500	
79	247.2	17.931	1.675E-02	.4289	1.910E-02	.4891	1.820E-02	.4661	.8500	
80	200.3	8.500	7.604E-03	.1948	8.621E-03	.2208	8.242E-03	.2111	.8500	
81	182.6	6.192	5.454E-03	.1397	6.170E-03	.1580	5.921E-03	.1517	.8500	
83	221.8	13.119	1.197E-02	.3066	1.360E-02	.3485	1.297E-02	.3322	.9500	
84	211.2	14.206	1.284E-02	.3288	1.457E-02	.3732	1.398E-02	.3580	.9500	
85	176.3	7.881	6.903E-03	.1768	7.804E-03	.1999	7.737E-03	.1982	.9500	

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AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-218A

GROUP CONFIG MODEL MACH NU PO,PSIA TO,DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL MODEL YAW
 57 1 7.99 545.3 1316 25.13 -4.87 30.00 0 -0

T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF-FH STFR SWITCH
 (DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R=.0175FT) (R=.0175FT) POSITION
 95.6 .056 2.517 .027 4.944E-05 7.694E-08 2.459E .06 3.904E-02 2.594E-02 1

GAGE	TW	COOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	H(TAW)/HREF	X/L	PHI	2Y/B
1	173.8	4.544	3.978E-03	.1019	4.496E-03	.1152	3.571E-03	.0915	.0050	0	0
2	237.0	18.471	1.712E-02	.4385	1.950E-02	.4994	1.758E-02	.4504	.0120	0	0
3	203.3	13.093	1.177E-02	.3014	1.335E-02	.3419	1.248E-02	.3197	.0200	0	0
4	179.1	10.110	8.885E-03	.2276	1.005E-02	.2573	9.687E-03	.2481	.0400	0	0
5	171.7	6.437	5.325E-03	.1441	6.356E-03	.1621	6.211E-03	.1591	.0600	0	0
6	165.9	5.297	4.606E-03	.1180	5.201E-03	.1332	5.131E-03	.1314	.0800	0	0
7	160.0	4.912	4.249E-03	.1088	4.795E-03	.1228	4.758E-03	.1219	.1000	0	0
8	148.4	4.229	3.622E-03	.0928	4.082E-03	.1046	4.080E-03	.1045	.1500	0	0
9	144.2	5.144	4.545E-03	.1164	5.143E-03	.1317	5.140E-03	.1317	.1500	30.0000	0
10	140.3	3.948	3.507E-03	.0898	3.972E-03	.1021	3.969E-03	.1017	.1500	45.5000	0
11	176.6	4.016	3.524E-03	.0903	3.984E-03	.1021	3.997E-03	.1024	.2000	0	0
12	150.5	3.915	2.501E-03	.0641	2.819E-03	.0722	2.826E-03	.0724	.2250	0	0
13	147.5	3.106	2.658E-03	.0681	2.995E-03	.0767	3.011E-03	.0771	.2500	0	0
14	152.8	3.001	2.580E-03	.0661	2.909E-03	.0745	2.926E-03	.0750	.2750	0	0
15	161.9	4.191	3.632E-03	.0930	4.059E-03	.1050	4.123E-03	.1056	.3000	34.0000	0
16	170.7	4.310	3.763E-03	.0964	4.252E-03	.1089	4.277E-03	.1096	.3000	40.0000	0
17	181.4	4.409	3.886E-03	.0995	4.396E-03	.1126	4.423E-03	.1133	.3000	45.0000	0
18	163.8	2.565	2.226E-03	.0570	2.513E-03	.0644	2.528E-03	.0648	.3250	0	0
19	162.0	2.542	2.203E-03	.0564	2.486E-03	.0637	2.501E-03	.0641	.3500	0	0
20	158.7	2.690	2.324E-03	.0595	2.623E-03	.0672	2.638E-03	.0676	.4000	0	0
21	160.6	2.872	2.485E-03	.0637	2.805E-03	.0718	2.822E-03	.0723	.4000	0	0
22	155.7	2.771	2.388E-03	.0612	2.693E-03	.0690	2.709E-03	.0694	.4500	0	0
23	150.8	2.879	2.470E-03	.0633	2.785E-03	.0713	2.801E-03	.0718	.5000	0	0
24	156.4	2.697	2.326E-03	.0596	2.624E-03	.0672	2.639E-03	.0676	.5000	0	0
25	154.2	2.636	2.269E-03	.0581	2.558E-03	.0655	2.574E-03	.0659	.5500	0	0
26	151.1	2.734	2.347E-03	.0601	2.646E-03	.0678	2.661E-03	.0682	.6000	0	0
27	158.4	2.588	2.236E-03	.0573	2.523E-03	.0646	2.538E-03	.0650	.6000	0	0
28	157.9	2.697	2.329E-03	.0596	2.627E-03	.0673	2.643E-03	.0677	.6500	0	0
29	157.0	2.648	2.285E-03	.0585	2.578E-03	.0660	2.593E-03	.0664	.7000	0	0
30	143.0	2.522	2.187E-03	.0560	2.469E-03	.0632	2.484E-03	.0636	.7500	0	0
31	163.8	2.342	2.032E-03	.0521	2.294E-03	.0588	2.309E-03	.0591	.8000	0	0
32	171.0	2.400	2.096E-03	.0537	2.368E-03	.0607	2.382E-03	.0610	.8000	0	0
33	165.3	2.118	1.841E-03	.0472	2.079E-03	.0532	2.100E-03	.0538	.8500	0	0
34	164.4	2.050	1.780E-03	.0456	2.010E-03	.0515	2.030E-03	.0522	.9000	0	0
35	169.7	1.731	1.510E-03	.0387	1.706E-03	.0437	1.730E-03	.0443	.9000	0	0
36	165.0	1.803	1.566E-03	.0401	1.768E-03	.0453	1.800E-03	.0461	.9500	0	0
37	160.3	2.013	1.742E-03	.0446	1.966E-03	.0504	2.006E-03	.0514	1.0000	0	0
38	177.7	2.260	1.986E-03	.0509	2.245E-03	.0575	2.292E-03	.0587	1.0000	0	0

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AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VA352-21UA

GROUP		CONFID	MODEL	MACH	NU	PU	PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL	MODEL	YAW
57		1		7.99	545.3	1316	25.13	-4.87	30.00	0	-0			
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF-FR (R=.0175FT) (R=.0175FT) POSITION	SIFR (R=.0175FT) (R=.0175FT) POSITION	2Y/B					
95.6	.056	2.517	3.927	4.944E-05	7.694E-08	2.459E-06	3.904E-02	3.904E-02	1					
GAGE	TV	COOT	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(TAW)	X/C						
52	177.3	4.518	3.968E-03	.1016	4.486E-03	.1149	4.454E-03	.1141	.0920					
53	172.9	3.408	2.981E-03	.0764	3.369E-03	.0863	3.374E-03	.0864	.3020					
54	168.4	2.754	2.400E-03	.0615	2.711E-03	.0694	2.714E-03	.0695	.4470					
55	162.8	2.554	2.215E-03	.0567	2.500E-03	.0640	2.506E-03	.0642	.5910					
56	177.1	2.500	2.195E-03	.0562	2.482E-03	.0636	2.504E-03	.0641	.7340					
57	175.4	2.518	2.208E-03	.0566	2.496E-03	.0639	2.523E-03	.0646	.8810					
58	191.8	8.730	7.765E-03	.1989	8.795E-03	.2251	8.611E-03	.2206	.0500					
59	191.6	6.394	5.636E-03	.1444	6.376E-03	.1633	6.301E-03	.1614	.1000					
60	169.6	4.740	4.135E-03	.1059	4.671E-03	.1196	4.633E-03	.1187	.2000					
61	154.3	4.135	3.560E-03	.0912	4.015E-03	.1028	3.995E-03	.1023	.3000					
62	162.6	3.638	3.154E-03	.0808	3.560E-03	.0912	3.562E-03	.0912	.5600					
63	156.4	4.223	3.642E-03	.0933	4.108E-03	.1052	4.128E-03	.1057	.7000					
64	157.8	2.600	2.245E-03	.0575	2.533E-03	.0649	2.586E-03	.0662	.9000					
65	191.7	6.682	5.891E-03	.1509	6.664E-03	.1707	6.632E-03	.1699	.1760					
66	166.8	4.785	4.164E-03	.1066	4.702E-03	.1204	4.673E-03	.1197	.4840					
67	157.0	3.429	2.959E-03	.0758	3.331E-03	.1109	3.346E-03	.1113	.7000					
68	178.8	5.830	5.126E-03	.1313	5.797E-03	.1485	5.762E-03	.1476	.9000					
69	163.2	4.538	3.937E-03	.1008	4.444E-03	.1138	4.420E-03	.1132	.1000					
70	161.5	3.333	2.887E-03	.0740	3.259E-03	.0835	3.235E-03	.0829	.2000					
71	156.6	4.122	3.556E-03	.0911	4.011E-03	.1027	4.005E-03	.1026	.4300					
72	156.8	2.703	2.332E-03	.0597	2.630E-03	.0674	2.664E-03	.0682	.6000					
73	158.4	2.806	2.424E-03	.0621	2.735E-03	.0701	2.795E-03	.0716	.8000					
74	190.2	10.179	9.041E-03	.2316	1.024E-02	.2622	1.014E-02	.2604	.9000					
75	190.0	5.854	8.744E-03	.2240	9.900E-03	.2536	9.830E-03	.2518	.1000					
76	170.2	6.106	5.329E-03	.1365	6.020E-03	.1542	5.989E-03	.1534	.3000					
77	164.6	4.105	3.565E-03	.0913	4.025E-03	.1031	4.043E-03	.1036	.5000					
78	162.5	3.750	3.251E-03	.0933	3.670E-03	.0940	3.747E-03	.0960	.7000					
79	191.5	10.972	9.757E-03	.2499	1.105E-02	.2831	1.094E-02	.2807	.9000					
80	162.0	6.809	5.900E-03	.1511	6.660E-03	.1706	6.612E-03	.1694	.1000					
81	180.2	13.418	1.190E-02	.3047	1.347E-02	.3450	1.340E-02	.3433	.3000					
83	194.1	11.011	1.053E-02	.2697	1.193E-02	.3055	1.182E-02	.3028	.5000					
84	161.7	5.639	4.885E-03	.1251	5.514E-03	.1412	5.491E-03	.1406	.1000					
85	181.8	7.933	6.995E-03	.1792	7.913E-03	.2027	8.073E-03	.2068	.3000					